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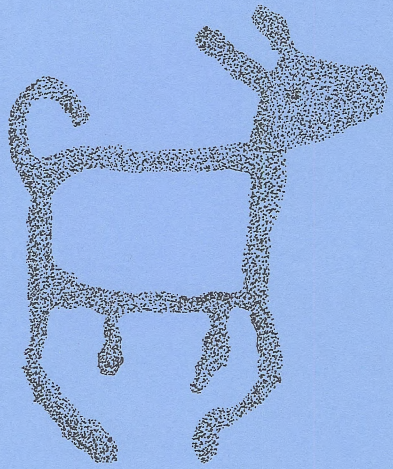
ROSWELL DISTRICT

January 1997

Roswell Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement

Carlsbad Resource Area Proposed Resource Management Plan Amendment/Final Environmental Impact Statement



VOLUME 1

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield, a combination of uses that take into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

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The cover artwork was provided by Mike and Barbara Bilbo from a tracing they made of a petroglyph in the Rio Bonito drainage, Lincoln County, New Mexico. Animals, such as the one on the cover, are depicted in the prehistoric and historic Indian rock art of southeastern New Mexico found in many locations in the BLM's Carlsbad and Roswell resource areas.

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PROPOSED RESOURCE MANAGEMENT PLAN
FINAL ENVIRONMENTAL IMPACT STATEMENT

for the
Roswell Resource Area
Roswell, New Mexico

AND

PROPOSED RESOURCE MANAGEMENT PLAN AMENDMENT
FINAL ENVIRONMENTAL IMPACT STATEMENT

for the
Carlsbad Resource Area
Carlsbad, New Mexico

VOLUME 1

Prepared by:

United States Department of the Interior
Bureau of Land Management
Roswell District
Roswell Resource Area
Carlsbad Resource Area
Roswell, New Mexico

January 1997

William C. Calkins
State Director, New Mexico

Edwin L. Roberson
Acting District Manager, Roswell District

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ROSWELL DISTRICT OFFICE
2909 West Second Street
Roswell, New Mexico 88202

IN REPLY REFER TO:
1614 (060)

Dear Reader:

Enclosed for your review is the proposed resource management plan (RMP) and final environmental impact statement (EIS) for the Roswell Resource Area and the proposed resource management plan amendment (RMPA) and final environmental impact statement for the Carlsbad Resource Area. The proposed RMP, proposed RMPA, and final EIS have been combined in this volume. A second volume contains copies of the public comments made on the Draft RMP/RMPA/EIS and the Bureau of Land Management's (BLM) responses to those comments.

This document presents the proposed plan for managing all public lands and resources in the Roswell Resource Area, and oil and gas resources in the Carlsbad Resource Area. The proposed plan and proposed plan amendment are refinements of the preferred alternative presented in the Draft RMP/RMPA/EIS published in October 1994.

The Draft RMP/RMPA/EIS is an integral part of this planning document. The draft EIS and this document together constitute the final EIS. The text and maps from the draft EIS may be needed at times as reference for this document. A limited number of copies of the Draft RMP/RMPA/EIS are still available. If you need a copy in order to conduct your review of the Proposed RMP/RMPA/FEIS, contact us at the address shown at the top of this page, or call us at 505-627-0272.

All parts of the proposed plan or proposed plan amendment may be protested by parties who participated in the planning process. Refer to the User's Guide in this volume for instructions on filing a protest.

A 30-day review and protest period begins when the Environmental Protection Agency publishes in the *Federal Register* its Notice of Availability of the final environmental impact statement containing the Proposed Roswell RMP and the Proposed Carlsbad RMPA. In addition to being published in the *Federal Register*, the dates of the protest period will be publicized in news releases and in letters sent to those who have participated in the planning process. Information about the protest period also is available by calling us at 505-627-0272 and will be posted on the BLM's New Mexico State Office Internet home page at http://www.nm.blm.gov (note: there is no period at the end of the Internet address). We also will attempt to have Volume 1 of the document posted on the home page for easier review.

At the end of the 30-day protest period, an Approved Roswell RMP/Record of Decision and an Approved Carlsbad RMPA/Record of Decision will be prepared as separate, stand-alone documents, unless a protest is received. Approval of the RMP or the RMPA will be withheld until final action on the protest has been completed. Any significant change made as a result of a protest will be made available for public review and comment before the RMP or RMPA is approved. Once any protests on the RMP or RMPA are resolved, the stand-alone approved plans and records of decision will be prepared and distributed to interested parties.

Thank you to those who have participated in the planning process. We hope your involvement will continue as we move forward to implement the plans and manage the public lands and resources in the Roswell and Carlsbad resource areas.

Sincerely,

Edwin L. Roberson

Edwin L. Roberson
Acting District Manager

ROSWELL RESOURCE MANAGEMENT PLAN ENVIRONMENTAL IMPACT STATEMENT
FOR THE ROSWELL RESOURCE AREA, NEW MEXICO
and
CARLSBAD RESOURCE MANAGEMENT PLAN ENVIRONMENTAL IMPACT STATEMENT
FOR THE CARLSBAD RESOURCE AREA, NEW MEXICO

( ) DRAFT (X) FINAL

LEAD AGENCY: U.S. Department of the Interior, Bureau of Land Management

TYPE OF ACTION: Administrative

JURISDICTION: Quay, DeBaca, Guadalupe, Curry, Roosevelt, Lincoln, and a portion of Chaves counties in the Roswell Resource Area. Eddy, Lea, and a portion of Chaves counties in the Carlsbad Resource Area.

ABSTRACT

This final environmental impact statement (EIS) addresses the proposed resource management plan for the Roswell Resource Area and the proposed resource management plan amendment for the Carlsbad Resource Area. This is an abbreviated final EIS; the Draft EIS published in October 1994, must be used in conjunction with this document.

The area covered by this EIS comprises about 3,687,000 acres of land in which the surface and minerals are federally owned and 10,338,000 acres in which only the minerals are federally owned ("split estate"). This public land is administered by the Bureau of Land Management, Roswell and Carlsbad resource areas, Roswell District, New Mexico.

This document presents the proposed plan for managing all public lands and resources in the Roswell Resource Area, and oil and gas resources in the Carlsbad Resource Area. The proposed plan and proposed plan amendment are refinements of the preferred alternative presented in the Draft RMP/RMPA/EIS published in October 1994. When the Roswell RMP and Carlsbad RMP Amendment are completed, they will provide comprehensive frameworks for managing the BLM-administered public lands and resources and for allocating their uses in the resource areas.

FILING A PROTEST:
All parts of the proposed plan or proposed plan amendment may be protested by parties who participated in the planning process. Refer to the User's Guide in this volume for instructions on filing a protest. A 30-day protest period begins when the Environmental Protection Agency publishes in the *Federal Register* its Notice of Availability of the final environmental impact statement containing the Proposed Roswell RMP and the Proposed Carlsbad RMPA.

CONTACT: David Stout
Bureau of Land Management
Roswell District Office
2909 West Second Street
Roswell, New Mexico 88201
(tel.) 505-627-0272

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VOLUME 2

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USER'S GUIDE

The focus of this Final EIS is on the Proposed Resource Management Plan. This document presents in Chapter 2 a complete, comprehensive Proposed Plan for the Roswell Resource Area, and a comprehensive Proposed Plan Amendment for the management of oil and gas in the Carlsbad Resource Area, which amends the Carlsbad RMP. After the New Mexico Governor's consistency review period and the resolution of any protests, the proposed plan will become the approved plan and BLM decision for the management of public lands in the Roswell Resource Area. Likewise, the proposed plan amendment will become the approved plan amendment and BLM decision for the management of oil and gas resources in the Carlsbad Resource Area.

Because portions of the Draft RMP/RMPA/EIS have not been reprinted, this document should be used with the Draft for a full description of all alternatives considered and their potential environmental impacts.

The summary comparison of management actions (Table 2) and the summary comparison of impacts (Table 3) from the Draft RMP/RMPA/EIS have not been reprinted and are incorporated in this document by reference.

Following this User's Guide is a list of Acronyms, to assist the reader. The list of Acronyms is at the front of the document to make it easier to find and use. Also in this User's Guide are the instructions for filing a protest on the Proposed RMP or Proposed RMPA.

A substantial number of changes were made to the Draft RMP/RMPA/EIS as a result of review and comment by the public and the BLM. These changes ranged from editorial corrections to major changes in the text. The changes are listed in Table 34, located in Chapter 5 of this document.

The changes to Chapter 1 of the Draft RMP/RMPA/EIS, Purpose and Need, are described in Table 34. Chapter 1 is not reprinted in this document. Chapter 1 describes the purpose of and need for the RMP and RMPA, which have not changed.

Chapter 2 of the Draft RMP/RMPA/EIS has not been reprinted in its entirety. For a description of all the alternatives considered, refer to Chapter 2 of the Draft. In this document, Chapter 2 contains a complete description of only the Proposed Plan and the Proposed Plan Amendment, which in each case is the combination of "Management Common to All Alternatives" and the Preferred Alternative (Alternative E) from the Draft RMP/RMPA/EIS, along with changes needed to address the comments of the public and of BLM specialists

on the Draft. Many changes were made to the alternatives in Chapter 2, and they are described in Table 34.

Chapter 3 of the Draft RMP/RMPA/EIS has not been reprinted. Modifications in Chapter 3 resulted from public comments or review by BLM specialists. In some cases, the modifications dictated the reprinting of a table. In other cases, modifications were minor and have been addressed in Table 34. The major change in Chapter 3 of the Draft is the rewriting of the socioeconomic discussions. The new text is printed in this document. Text regarding the Waste Isolation Pilot Plant, wildlife habitat condition, and animal damage control was added to Chapter 3, and that text is printed in this document, as well.

Chapter 4 contains the description of the expected impacts of the Proposed Plan. This description is a rewrite of Chapter 4 of the Draft RMP/RMPA/EIS, including a major revision of socioeconomic impacts. Other modifications in the text of Chapter 4 of the Draft resulting from public comments or review by BLM specialists have been documented in Table 34.

Chapter 5 is the description of the Consultation and Coordination efforts conducted by the BLM during the development of the Draft RMP/RMPA/EIS and the Proposed RMP/RMPA/FEIS. Included in Chapter 5 is a summary of public involvement opportunities and activities conducted since the Draft was published in October 1994. This chapter also lists the individuals, agencies and organizations who provided written comments on the Draft RMP and contains information about the comments. Each of the letters received during the comment period is reprinted in a separate volume as part of Chapter 5, along with BLM responses to the comments made in the letters. The BLM's responses provide historical background, explanations and valuable insights about the development of the RMP that are not appropriate for inclusion in the RMP/RMPA document. Parts of the Resource Users Coalition's Alternative F also are printed in that volume, as a side-by-side comparison with the BLM's Alternative E from the Draft RMP/RMPA.

And, Chapter 5 contains Table 34, which lists the text changes in the Draft RMP/RMPA/EIS that were made as a result of public comment or internal BLM review.

Appendixes follow Chapter 5. Only appendixes relating directly to land use decisions or allocations made in the Proposed RMP/RMPA have been reprinted. Each appendix is prefaced by a brief description of its contents and purpose. Refer to the beginning of the section containing the appendixes for a list of those that have been reprinted. Changes made in appendixes not reprinted are documented in Table 34.

The Glossary has been reprinted to accommodate new entries. The References section has not been reprinted. As with other sections, changes made in the References section are documented in Table 34.

Filing a Protest on the RMP or RMPA

The resource management planning process includes an opportunity for administrative review by submitting a plan protest to the BLM Director, if you believe the approval of the Proposed Roswell RMP or the Proposed Carlsbad RMPA would be in error. (See 43 CFR 1610.5-2.) Careful adherence to these guidelines will assist you in preparing a protest that will assure the greatest consideration of your point of view.

Only those persons or organizations who participated in our planning process leading to the Proposed Roswell RMP or Proposed Carlsbad RMPA may protest. If our records do not indicate that you had any involvement in any stage in the preparation of the Proposed RMP/RMPA, your protest will be dismissed without further review.

A protesting party may raise only those issues which he or she submitted for the record during the planning process. New issues raised in the protest period should be directed to the Roswell Resource Area Manager or the Carlsbad Resource Area Manager for consideration in plan implementation, as potential plan amendments, or as otherwise appropriate.

The period for filing a plan protest begins when the Environmental Protection Agency publishes in the *Federal Register* its Notice of Availability of the final environmental impact statement containing the Proposed Roswell RMP and the Proposed Carlsbad RMPA. In addition to being published in the *Federal Register*, the dates of the protest period will be publicized in news releases and in letters sent to those who have participated in the planning process. Information about the protest period also is available by calling the BLM at 505-627-0272.

The protest period is open for 30 days. There is no provision for any extension of time. To be considered "timely," your protest **must be postmarked** no later than the last day of the protest period. Also, although **not** a requirement, we suggest that you send your protest by certified mail, return receipt requested.

Protests **must** be filed in writing to:

Director (WO-210)
Bureau of Land Management
Attn: Brenda Williams
1849 C Street, N.W.
Washington, D.C. 20240

In order to be considered complete, your protest must contain, at a minimum, the following information:

1. The name, mailing address, telephone number, and interest of the person filing the protest.

2. A statement of the issue or issues being protested.

3. A statement of the part or parts of the Proposed Roswell RMP or Proposed Carlsbad RMPA being protested. To the extent possible, this should be done by reference to specific pages, paragraphs, sections, tables, or maps included in the document.

4. A copy of all documents addressing the issue or issues that you submitted during the planning process or a reference to the date the issue or issues were discussed by you for the record.

5. A concise statement explaining why the BLM State Director's proposed decision is believed to be incorrect. ***This is a critical part of your protest.*** Take care to document all relevant facts. As much as possible, reference or cite the planning documents, environmental analysis documents, available planning records (e.g., meeting minutes or summaries, or correspondence). A protest that merely expresses disagreement with the New Mexico State Director's proposed decision, without any data, will not provide us with the benefit of your information and insight. In this case, the Director's review will be based on the existing analysis and supporting data.

ACRONYMS

The following acronyms and abbreviations are used in this RMP/RMPA.

ACEC	Area of Critical Environmental Concern
ADC	Animal Damage Control
AFB	Air Force Base
AMP	Allotment Management Plan
APD	Application for Permit to Drill
APHIS	Animal and Plant Health Inspection Service
AQB	Air Quality Bureau, New Mexico Environment Department
AQCR	Air Quality Control Regulation
ASTM	American Society of Testing Materials
AU	Animal Unit
AUM	Animal Unit Month
BACT	Best Available Control Technology
BLM	Bureau of Land Management
BMP	Best Management Practice
BOP	Blowout Preventer
BOR	Bureau of Reclamation
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CMP	Cooperative Management Plan
C&MU	Classification and Multiple Use Act
COA	Condition of Approval
CRA	Carlsbad Resource Area
CRMP	Coordinated Resource Management Plan
CSU	Controlled Surface Use
DDC	Drainages, Draws, Canyons (community)
DOE	(U.S.) Department of Energy
DPC	Desired Plant Community
EA	Environmental Assessment
EB	Environmental Improvement Board, New Mexico
EIS	Environmental Impact Statement
ERMA	Extensive Recreation Management Area
EPA	(U.S.) Environmental Protection Agency
ESA	Endangered Species Act
ESI	Ecological Site Inventory
FCRPA	Federal Cave Resources Protection Act
FEIS	Final Environmental Impact Statement
FHA	Farmers Home Administration
FHBMs	Flood Hazard Boundary Maps
FIL	Fire Intensity Level
FLPMA	Federal Land Policy and Management Act
FIRMs	Flood Insurance Rate Maps
GIS	Geographic Information System
HMAP	Herd Management Plan
HMM	Hazardous Materials Management
HMP	Habitat Management Plan
KGS	Known Geologic Structure
LMP	Land Management Plan (Dept. of Energy)
LWA	Land Withdrawal Act
LWCF	Land and Water Conservation Fund
MDS	Mixed Desert Shrub (community)
MFP	Management Framework Plan
MFPA	Management Framework Plan Amendment
Mg/1	Milligrams per liter
Mph	Miles per hour
MSA	Management Situation Analyses
MSL	Mean Sea Level
MI	Management Ignited
MOU	Memorandum of Understanding
MSM	Mixed Shrub Malpais (community)
NAAQS	National Ambient Air Quality Standards
NCA	National Conservation Area
NEPA	National Environmental Policy Act
NL	No Lease (not open to oil and gas leasing)
NM	New Mexico
NMDA	New Mexico Department of Agriculture
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environmental Department
NMNHP	New Mexico Natural Heritage Program
NMOCD	New Mexico Oil Conservation Division
NMSO	New Mexico State Office
NNL	National Natural Landmark
NOI	Notice of Intent
NOL	Not open to leasing
NPS	Nonpoint Source Pollution
NRCS	Natural Resource Conservation Service (formerly Soil Conservation Service)
NRL	National Resource Lands
NSO	No Surface Occupancy
NTL	Notice to Lessee
OHV	Off-Highway Vehicle
ONA	Outstanding Natural Areas
P	Primitive (ROS)
PDM	Predator Damage Management
PILT	Payment in Lieu of Taxes
PJ	Pinon-Juniper (community)
PNF	Prescribed Natural Fire
Ppm	Parts per million
PRIA	Public Rangelands Improvement Act
PSD	Prevention of Significant Air Quality Deterioration
R	Rural (ROS)
RA	Resource Area
RCRA	Resource Conservation and Recovery Act
RDO	Roswell District Office
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
RN	Roaded natural (ROS)
RNA	Research Natural Area
R&PP	Recreation and Public Purposes
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
RRA	Roswell Resource Area
SASEM	Simple Approach Smoke Estimation Model
SCS	Soil Conservation Service (now the Natural Resource Conservation Service)

SEO	State Engineer Office, State of New Mexico
SHPO	State Historic Preservation Officer
SMA	Surface Management Agency
SOD	Shinnery-Oak Dune (community)
SPNM	Semi-primitive nonmotorized (ROS)
SPM	Semi-primitive motorized (ROS)
SRMA	Special Recreation Management Area
SRUP	Special Recreation Use Permit
STC	Standard Terms and Conditions
SUOR	Surface Use and Occupancy Requirements
TDS	Total Dissolved Solids
T&E	Threatened and Endangered
TL	Timing Limitations
TRS	Total Reduced Sulfur
U	Modern Urban (ROS)
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRCO	Vegetation Resource Condition Objectives
VRM	Visual Resource Management
WA	Wilderness Area
WHA	Wildlife Habitat Area
WIPP	Waste Isolation Pilot Plant
WSA	Wilderness Study Area
WQCC	Water Quality Control Commission

SUMMARY

The Proposed Roswell Resource Management Plan/Final Environmental Impact Statement (RMP/EIS) presents the Proposed Plan for managing all uses of the public lands on about 1,490,000 acres in the Roswell Resource Area where both the surface and subsurface estates are in federal ownership and are administered by the BLM. The Proposed Plan also presents management for an additional 8.4 million acres of federal mineral estate where the surface is managed by other surface management agencies of the federal or New Mexico State governments, or is in private ownership. In these cases, the leasing of fluid minerals (i.e., oil and gas) is administered by the BLM.

The public lands described above, including the mineral estate, are administered by the Bureau of Land Management through its Roswell Resource Area Office (see Table 1). The Roswell Resource Area encompasses Chaves County (except for the "bootheel") and all of Lincoln, DeBaca, Roosevelt, Curry, Quay, and Guadalupe counties in southeastern and east-central New Mexico (see Map 1).

The Proposed Carlsbad Resource Management Plan Amendment/Final Environmental Impact Statement (RMPA/EIS) presents the Proposed Plan for managing oil and gas resources and use on about 2,197,000 acres in the Carlsbad Resource Area where both the surface and subsurface estates are in federal ownership and are administered by the BLM (see Table 1). The Proposed Plan Amendment also presents management for an additional 1.9 million acres of federal mineral estate where the surface is managed by other surface management agencies of the federal or New Mexico State governments, or is in private ownership. In these cases, the leasing of fluid minerals (i.e., oil and gas) is administered by the BLM.

The public lands described above, including the mineral estate, are administered by the Bureau of Land Management through its Carlsbad Resource Area Office. The Carlsbad Resource Area encompasses the "bootheel" of Chaves County and all of Eddy and Lea counties in southeastern New Mexico (see Map 2).

After the New Mexico Governor's consistency review period and the resolution of any protests, the proposed plan will become the approved plan and BLM decision for the management of public lands in the Roswell Resource Area. Likewise, the proposed plan amendment will become the approved plan amendment and BLM decision for the management of oil and gas resources in the Carlsbad Resource Area.

TABLE 1
ROSWELL DISTRICT LAND OWNERSHIP ACREAGES FOR PURPOSES OF ANALYSIS

Area	Total Acres (All Owners)	BLM-Administered Federal Surface and Subsurface[1/,4/]	Other Surface Owners, Federal Minerals (Oil and Gas)[2/,4/]	Other Surface Owners, Federal Minerals (All Minerals)[2/]
Roswell District	20,346,000[3/]	3,687,000	10,148,000	10,338,000
Carlsbad RA	6,381,000	2,197,000	1,898,000	1,933,000
Roswell RA	13,965,000	1,490,000	8,250,000	8,405,000

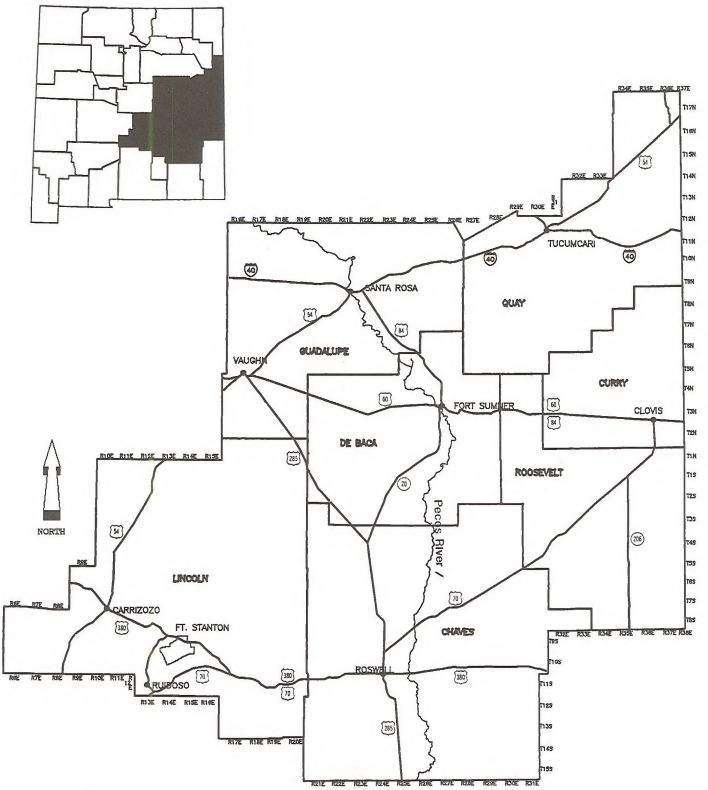
[1/] The federal surface/subsurface category assumes all subsurface acres are oil and gas acres. the acres represented are those where both the surface and mineral estate are owned by the Federal government, and managed by the BLM.

[2/] Both categories of federal minerals describe split estate where the surface is not administered by the BLM. the acreages represented are mineral estate acres, only.

[3/] All acreage numbers are rounded to the nearest thousand.

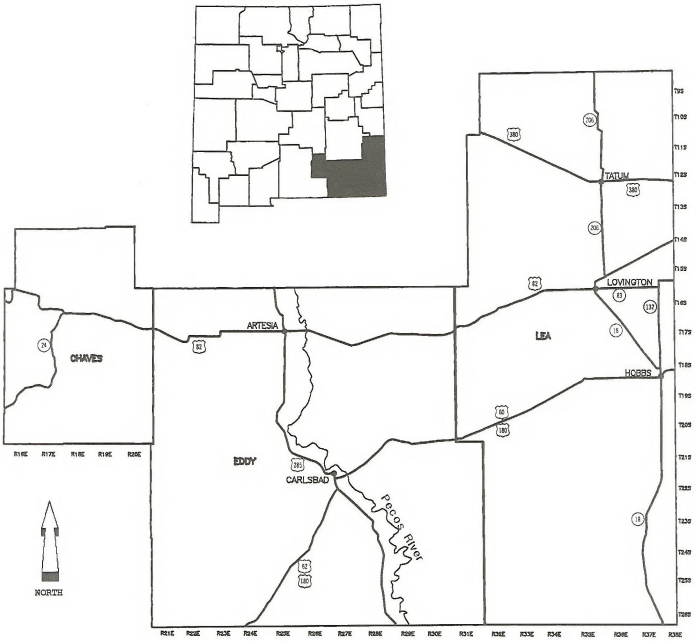
[4/] To determine total federal oil and gas acres for a particular area, add acreages in columns 2 and 3.

Source: BLM ALMRS and GIS data, 1994.



SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

MAP 1
GENERAL LOCATION MAP
Roswell Resource Area



SCALE
1/2" = 9.5 Miles
BLM-Roswell District, 1994

MAP 2
GENERAL LOCATION MAP
Carlsbad Resource Area

CHAPTER 1: PURPOSE AND NEED

Chapter 1 of the Draft Roswell RMP/EIS and the Draft Carlsbad RMPA/EIS has not been reprinted. Refer to the Draft for the original text and to Table 34 in the Proposed RMP/RMPA/Final EIS for changes in the text resulting from public comments and BLM review.

CHAPTER 2: PROPOSED PLAN

INTRODUCTION

DESCRIPTION OF THE PROPOSED PLAN

The Proposed Plan for the Carlsbad Resource Area is a comprehensive resource management plan (RMP) for oil and gas resources. Upon adoption, this plan would amend (replace) the management prescriptions for oil and gas in the Carlsbad Resource Management Plan (RMP)(1988). All other management prescribed in the Carlsbad RMP would remain unchanged. The Proposed Plan for the Roswell Resource Area is a comprehensive resource management plan (RMP) for the entire resource area. The Proposed Plans for the Roswell and Carlsbad resource areas attempt to balance environmental protection with the BLM's multiple-use mandates.

The Proposed Plan for the Roswell Resource Area is essentially Alternative E as described in the Draft Roswell Resource Management Plan/Environmental Impact Statement (RMP/EIS), and includes "Management Common to All Alternatives," also from the Draft RMP/EIS. Alternative E originally was derived from a combination of the other four alternatives proposed in the Draft RMP/EIS. Likewise, the Proposed Plan for the Carlsbad Resource Area is essentially Alternative E for oil and gas management as described in the Draft Carlsbad Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS), and includes "Management Common to All Alternatives," also from the Draft RMPA/EIS. Alternative E originally was derived from a combination of the other four alternatives for oil and gas management proposed in the Draft RMPA/EIS.

In this plan, management proposed for the Carlsbad Resource Area is found only in the Fluid Minerals section under the Minerals Management heading and in appendixes referenced in that section. All other proposed management in this plan is for the Roswell Resource Area. The term "resource area" applies to the Roswell Resource Area.

The Surface Use and Occupancy Requirements (Appendix 3) would be applied, when applicable, to all actions described in this plan.

MINERALS MANAGEMENT

Fluid Minerals Management

Goal: Provide for the leasing, exploration and development of oil and gas resources within the Roswell District. Some existing stipulations may be rescinded, and would be replaced by standard terms and conditions or less restrictive stipulations.

ROSWELL DISTRICT

The BLM administers approximately 13,835,000 acres of federal oil and gas mineral estate in the Roswell District. In this plan:

Approximately 13,215,841 acres (96 percent of the oil and gas mineral estate) would be open to leasing and development under the BLM's standard terms and conditions, the Surface Use and Occupancy Requirements (Appendix 3), the Roswell District Conditions of Approval (Appendix 4), and the Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas (Appendix 5). The discrete components of these requirements would be applied on a case-by-case basis when needed to mitigate impacts or guide use. The Surface Use and Occupancy Requirements would be applied to new leases or as conditions of approval for proposed activities on existing leases, following NEPA analysis. The Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas would be applied as conditions of approval.

As a result of the requirements described above, some leasing stipulations currently available for use on new leases would be rescinded or would be replaced by revised stipulations, in both the Carlsbad and Roswell resource areas. Refer to Table 2 for a comparison of leasing stipulations. Leasing stipulations on leases already issued would not be affected.

Approximately 117,633 acres (<1 percent) would be open to leasing, with a No Surface Occupancy stipulation attached to new leases.

Approximately 501,526 acres (4 percent) would be closed to leasing. In these areas, existing leases would continue to be developed on a case-by-case basis. However, once leases terminate, they would not be re-offered for leasing.

The Authorized Officer may consider expressions of interest for the leasing of BLM-administered public lands when the sole purpose of leasing is to maintain state well-spacing requirements. This could occur in areas that are closed to leasing (except for wilderness study areas) or open to oil and gas leasing with no surface occupancy, including areas affected by the Surface Use and Occupancy Requirements (Appendix 3). This leasing opportunity could apply to an entire lease or to a portion of a lease parcel. In this situation, there can be no intention on the part of the nominator to occupy the surface of the lease or portion of the lease. For a lease to be issued, there can be no concerns about impacts to subsurface resources or values resulting from drilling on any unrestricted parts of the lease or on adjacent leases, and surface occupancy or use absolutely would not be authorized. A lease could be issued for a standard term with a no surface occupancy leasing stipulation (See Figure 1).

FIGURE 1

NO SURFACE OCCUPANCY STIPULATION

Maintenance of state well-spacing requirements.

No surface occupancy or use is allowed on the lands described below:

(legal description)

For the purpose of: The lease or portion of a lease for the area described above is issued for the sole purpose of assisting in the orderly development of the federal mineral estate. This lease will be used to maintain state well-spacing requirements on the lands described above. This lease absolutely does not grant surface occupancy or use, and that requirement cannot be waived unless changes are made in a land use plan or plan amendment.

Roswell 52

(Date)

TABLE 2
COMPARISON OF CURRENT ROSWELL DISTRICT OIL AND GAS LEASING STIPULATIONS WITH PROPOSED LEASING STIPULATIONS

Current Stipulation	Type of Restriction	Feature	Area	Rescind, Replace or Retain
R 3100-13		Potash	CRA	Retain
Roswell 1	NSO	Pope's Well National Register Site	CRA	Retain
Roswell 2	Timing	Important Seasonal Wildlife Habitat (Lesser Prairie Chicken)	RDO	Replace with SUOR
Roswell 3	Timing	Important Seasonal Wildlife Habitat (Antelope)	CRA	Rescind
Roswell 4	NSO	Mescalero Sands Outstanding Natural Area	RRA	Replace with SUOR, ACEC
Roswell 5	CSU	Cave and Karst Resource	RDO	Replace with SUOR
Roswell 6	NSO	Torgac Cave National Natural Landmark	RRA	Replace with SUOR, ACEC
Roswell 7	NSO	Maroon Cliffs Archeological District	CRA	Retain, expand
Roswell 8	NOL	Torgac Cave National Natural Landmark	RRA	Rescind (not needed as a stip.)
Roswell 9	NSO	Laguna Plata Archeological District	CRA	Retain
Roswell 10	NOL	Mathers Research Natural Area	RRA	Rescind (not needed as a stip.)
Roswell 11	NSO	Overflow Wetlands Habitat Area	RRA	Replace with ACEC
Roswell 12	CSU	Ute Lake State Park	RRA	Replace with NSO
Roswell 13	CSU	Bottomless Lakes State Park	RRA	Replace with NSO
Roswell 14	CSU	Valley of Fires	RRA	Replace with NSO
Roswell 15	NSO	Living Desert State Park	CRA	Rescind (will go to NOL)
Roswell 16	NSO	Threatened Plant Species (Gypsum wild-buckwheat)	CRA	Retain
Roswell 17	NOL	WIPP Exchange	CRA	Rescind (not needed as a stip.)
Roswell 18	CSU	Maroon Cliffs	CRA	Rescind
Roswell 19	NSO	Cave Resources	CRA	Replace with SUOR, except for Chosa Draw ACEC
Roswell 20	CSU	Chosa Draw Caves ACEC	CRA	Rescind

TABLE 2 (continued)
COMPARISON OF CURRENT ROSWELL DISTRICT OIL AND GAS LEASING STIPULATIONS WITH PROPOSED LEASING STIPULATIONS

Current Stipulation	Type of Restriction	Feature	Area	Rescind, Replace or Retain
Roswell 21	NSO	South Texas Hill Canyon	CRA	Retain
Roswell 22	NSO	Natural and Scenic Values	CRA	Retain except for Dark Canyon
Roswell 23	CSU	Dark Canyon ACEC/Scenic Area	CRA	Rescind
Roswell 24	Timing	Dark Canyon ACEC/Scenic Area	CRA	Rescind
Roswell 25	CSU	Guadalupe Escarpment Scenic Area	CRA	Rescind (Replace with Partial NSO)
Roswell 26	CSU	Bogle Flat Spring	CRA	Replace with SUOR
Roswell 27	CSU	Preservation Spring	CRA	Replace with SUOR
Roswell 28	NSO	Cottonwood Spring and Draw	CRA	Replace with SUOR
Roswell 29	CSU	Owl Spring	CRA	Replace with SUOR
Roswell 30	NSO	Ben Slaughter Draw	CRA	Replace with SUOR
Roswell 31	CSU	Blue Spring	CRA	Replace with SUOR
Roswell 32	NSO	Yeso Hills	CRA	Retain
Roswell 33	NSO	Critical Habitat for T&E Species (Bluntnose Shiner)	CRA	Retain
Roswell 34	CSU	Critical Habitat for T&E Species (McKittrick ramshorn snail)	CRA	Replace with SUOR
Roswell 35	NSO	Historic Values-Potash Bull Wheel	CRA	Rescind
Roswell 36	Timing	Protection of Nesting Habitat (Herons)	CRA	Replace with SUOR
Roswell 37	NSO	Archeological Values (Poco Site)	CRA	Retain
Roswell 38	CSU	Archeological Values (Bear Grass Draw)	CRA	Rescind
Roswell 39	NSO	Pecos River/Canyon Complex ACEC	CRA	Retain
Roswell 40	CSU	Pecos River/Canyon Complex ACEC	CRA	Rescind
Roswell 41	NSO	Pecos River Corridor	CRA	Replace with SUOR

TABLE 2 (continued)
COMPARISON OF CURRENT ROSWELL DISTRICT OIL AND GAS LEASING STIPULATIONS WITH PROPOSED LEASING STIPULATIONS

Current Stipulation	Type of Restriction	Feature	Area	Rescind, Replace or Retain
Roswell 42	CSU	Southern Gypsum Soil Area	CRA	Rescind
Roswell 43	NSO	Open Potash Mine Workings	CRA	Retain
Roswell 44	CSU	Wetland or Riparian Habitat	RRA	Replace with SUOR
Roswell 45	CSU	Pecos River Floodplain (Brantley Project)	CRA	Replace with SUOR
Roswell 46	Lease Notice	Cave/Karst Occurrence Area	RDO	Retain
Roswell 47	Lease Notice	T&E or Sensitive Species (Kuenzler cactus)	RRA	Retain
Roswell 48	CSU	Guadalupe Escarpment Habitat Management Area	CRA	Retain
Roswell 49	CSU	Slope and Floodplains	CRA	Replace with SUOR
Roswell 50	NOL	Dark Canyon EIS Study Area and Lechuguilla Cave Protection Area	CRA	Rescind (not needed as a stip.)
Roswell 51	Lease Notice	Protection of the Dune Sagebrush Lizard	RDO	Retain
Roswell 52	NSO	Maintenance of state well-spacing requirements	RDO	(new)

Key to Abbreviations: **NOL** Not Open to Leasing; **NSO** No Surface Occupancy; **CSU** Controlled Surface Use; **SUOR** Surface Use and Occupancy Requirements; **ACEC** Area of Critical Environmental Concern; **CRA** Carlsbad Resource Area; **RRA** Roswell Resource Area; **RDO** Roswell District Office

The BLM would continue to require oil and gas lessees to conduct operations in a manner that would minimize adverse impacts to resources, land uses, and users. To that end, the BLM would continue to apply reasonable mitigation measures. These would typically include, at a minimum, relocating proposed operations by no more than 200 meters or prohibiting new surface disturbance for a period of no more than 60 days. Mitigations of impacts involving moves greater than 200 meters or delays greater than 60 days could result from project-specific NEPA analysis. (Also, refer to the introduction to Appendix 3.)

Requirements that have been issued in Orders or Notices to Lessees (NTL) concerning environmental and other factors associated with the drilling of oil and gas wells would continue to be enforced, as would future orders and NTLs.

In addition to any stipulations appended to a lease, the development of new and existing leases would be further guided by the application of the Roswell District Standard Conditions of Approval (Appendix 4) which would be applied on a case-by-case basis.

Open-top tanks, reserve pits, disposal pits, or other open pits would be required to be equipped to deter entry by birds, bats or other wildlife, and livestock.

The BLM would encourage the use of practices such as off-lease measurement, unit agreements, field development plans, communitization agreements, consolidated batteries, and other innovative approaches, to reduce the extent of surface disturbance and to mitigate other forms of impacts. These practices would conform with Onshore Oil and Gas Orders 4 and 5, and state requirements.

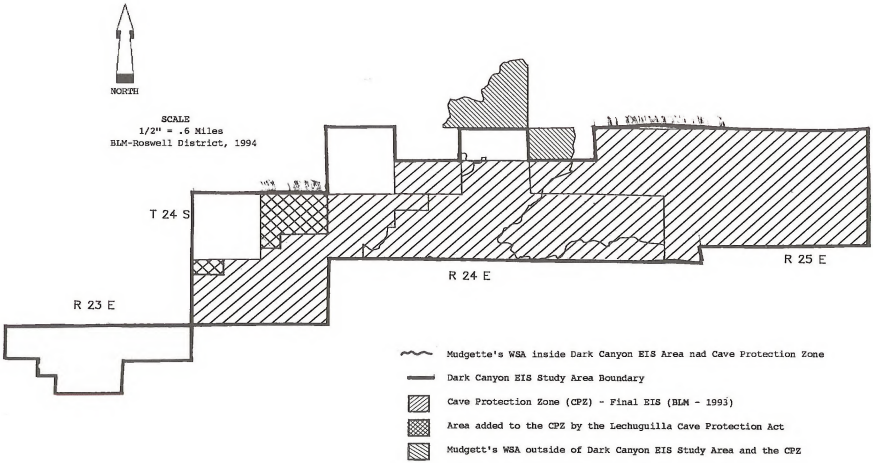
The construction, maintenance, rehabilitation, abandonment, and closure of all roads subject to BLM jurisdiction would be conducted according to the "BLM-NMSO Road Policy, Standards and Procedures." Specific practices for implementing this policy are described in Appendix 4. The BLM may monitor use of roads and notify joint-cost-sharing companies when maintenance is needed.

Areas designated as Wilderness Study Areas (WSAs) are closed to leasing as part of the Wilderness Interim Management Policy. Existing leases in WSAs would not be reissued once they expire. Even if the WSAs are not designated as wilderness by Congress, all WSAs in the Roswell District would remain closed to leasing, with the exception of about 1,060 acres in the Mudgetts WSA that lie north of the cave protection zone identified in the Dark Canyon Environmental Impact Statement (see Map 3). Management of the part of the Mudgetts WSA that could eventually be opened to leasing would be governed by the Surface Use and Occupancy Requirements, the Practices for Oil and Gas Drilling Operations in Cave and Karst Areas, and the Roswell District Conditions of Approval.

Cultural sites determined to be eligible and potentially eligible to the National Register of Historic Places would be protected from damage by avoidance. If avoidance could not be accomplished, potentially eligible sites would be tested to determine their eligibility and mitigation such as data recovery would be required for eligible sites. Coordination and consultation about the treatment of sites would continue between the BLM and SHPO, pursuant to Section 106 of the National Historic Preservation Act.

As a standard practice, ephemeral and perennial drainages and wetland/riparian areas would be avoided as locations for oil and gas related facilities, including drilling locations, production facilities, roads, and pipelines. (Refer to Appendix 3, Streams, Rivers and Floodplains.) Whenever possible, facilities would be confined to existing alignments or locations, minimizing width requirements and maximizing multiple occupancy.

Produced water disposal pits on public lands would not be allowed west of the Pecos River. Additionally, these pits would not be allowed within 100-year floodplains or within up to 200 meters of drainages, playas, water wells, or springs throughout the district. In all other areas


NORTH
SCALE
1/2" = .6 Miles
BLM-Roswell District, 1994
T 24 S
R 23 E
R 24 E
R 25 E
Mudgette's WSA inside Dark Canyon EIS Area nad Cave Protection Zone
Dark Canyon EIS Study Area Boundary
Cave Protection Zone (CPZ) - Final EIS (BLM - 1993)
Area added to the CPZ by the Lechuguilla Cave Protection Act
Mudgett's WSA outside of Dark Canyon EIS Study Area and the CPZ

MAP 3
DARK CANYON AREA
Carlsbad Resource Area

of the Roswell District, disposal of produced water in lined pits may be permitted on public lands. Produced water disposal would be managed in accordance with Onshore Oil and Gas Order No. 7.

Revegetation of disturbed areas would be required. Reclamation techniques, such as deeper rips, different seed mixtures, mulching, and the application of fertilizer, may be used to enhance the reclamation of pits, roads and pads to provide for maximum ground and surface water protection. The ripping or removal of caliche from roads and pads could be required to enhance reclamation efforts. Waiver of this requirement would be considered if diligent attempts to revegetate a site have failed and the Authorized Officer determines that further attempts would be futile.

The BLM would continue to process Notices of Intent (NOI) to conduct geophysical exploration on public lands, on a case-by-case basis. Geophysical exploration may be an appropriate, temporary surface use in areas that are closed to oil and gas leasing or that have restricted surface use, such as no surface occupancy leasing stipulations. The processing of geophysical NOIs will include NEPA compliance. The terms and conditions for NOIs and the conditions of approval for geophysical exploration are listed in Appendix 4. The Surface Use and Occupancy Requirements (Appendix 3) and off-highway vehicle use designations would also be applied to geophysical exploration, when necessary.

The burial of pipelines associated with oil and gas exploration, development, production and transportation is preferred. Pipelines greater than four inches in nominal diameter, all injection lines, and gas lines with a pressure greater than 125 psi must be buried and preferably be constructed of steel. If the use of plastic pipe is approved, the pipe must meet American Petroleum Institute specifications. A waiver of the requirement to bury pipelines would be considered in the following situations:

- The temporary (one year or less) surface installation of plastic pipelines, after considering the length of the pipeline, its proposed location, the potential hazards present (e.g., likelihood of damage by fire or OHV use), the characteristics of the pipe regarding deterioration (including by sunlight), the ASTM or similar specifications for the pipe, the intended use of the pipeline, and other appropriate factors.

- Where rock outcrops at the surface make the burial of a pipeline impractical, such as when unreasonable and unreclaimable surface disturbance would result. Where the pipeline is exposed, painting may be required in accordance with the painting policy for visual resource management areas (see Appendix 3) and NTL 87-1, New Mexico. Waiver of the requirement for painting would be considered when short distances are involved, when a pipeline is not readily visible because of screening, or in areas that are not visually sensitive.

- Where the surface ownership along the pipeline route is mixed, and the majority of surface ownership is not public. In those cases, the installation of pipelines on public land would conform to the practice to be employed on the remainder of the pipeline, unless special resource management concerns dictate strict adherence to this policy.

CARLSBAD RESOURCE AREA

The BLM administers approximately 4,095,000 acres of federal oil and gas mineral estate in the Carlsbad Resource Area. In this plan:

Approximately 3,907,156 acres (95 percent of the oil and gas mineral estate) would be open to leasing and development as described above under "Roswell District." The total acreage includes controlled surface use restrictions and areas affected by the Surface Use and Occupancy Requirements. See Tables 3 and 4, and Map 4.

Approximately 78,327 acres (2 percent) would be open to leasing, with a No Surface Occupancy stipultion attached to new leases.

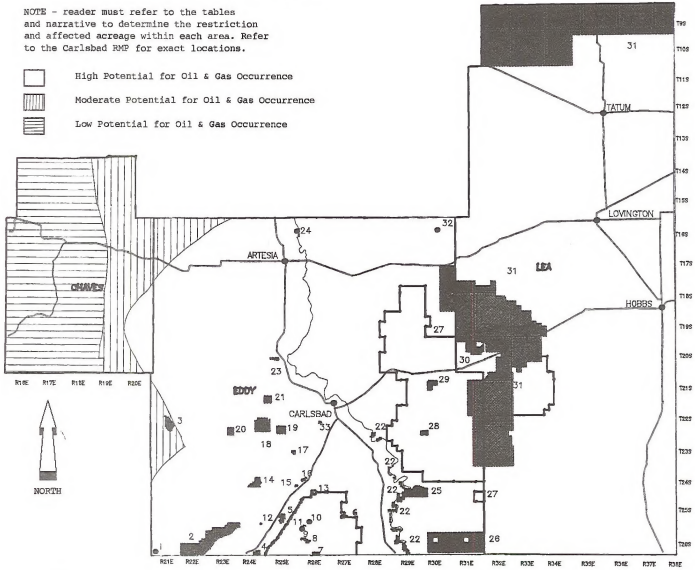
1 - McKittrick/Devil's Den WSAs	X
2 - Guadalupe Scenic Area/ Lonesome Ridge ACEC, WSA	X
3 - East Guadalupe HMA/ South Texas Hill RNA	X
4 - Yeso Hills	X
5 - Chosa Draw	X
6 - Southern Gypsum Soil Area	Not Applicable
7 - Owl Spring	Not Applicable
8 - CP Hill Buckwheat Area	X
9 - Ben Slaughter Draw	Not Applicable
10 - Preservation Spring	Not Applicable
11 - Cottonwood Spring	Not Applicable
12 - Black River Buckwheat Area	X
13 - Blue Spring	Not Applicable
14 - Mudgett's WSA/Dark Canyon EIS Area	X
15 - KFF Caverns	Not Applicable
16 - Fence Canyon Caves	Not Applicable
17 - Yellow Jacket/Lair Caves	Not Applicable
18 - McKittrick Hill Caves	X
19 - Honest Injun Cave	Not Applicable
20 - Bogle Spring	Not Applicable
21 - Little Walt Canyon	X
22 - Pecos River Corridor	Not Applicable
23 - Seven Rivers Hills HMA	X
24 - Blunt Nose Shiner Critical Habitat	Not Applicable
25 - Pecos River Canyons Complex ACEC	X
26 - Phantom Banks Heronries/Pope's Well	X
27 - Potash Area	X
28 - Tamarisk Flat Heronries	Not Applicable
29 - Maroon Cliffs Arch. District	X
30 - Laguna Plata Arch. District	X
31 - Prairie Chicken Habitat	Not Applicable
32 - Poco Site	X
33 - Lost Cave	Not Applicable

NOTE - reader must refer to the tables and narrative to determine the restriction and affected acreage within each area. Refer to the Carlsbad RMP for exact locations.

High Potential for Oil & Gas Occurrence

Moderate Potential for Oil & Gas Occurrence

Low Potential for Oil & Gas Occurrence



MAP 4
OIL and GAS LEASING
STIPULATION AREAS
Carlsbad Resource Area

TABLE 3
SUMMARY OF OIL AND GAS LEASING RESTRICTIONS
BY HYDROCARBON POTENTIAL
(ESTIMATED SURFACE ACRES[1/])
CARLSBAD RESOURCE AREA
PROPOSED PLAN

Hydrocarbon Potential	Closed To Leasing	Open To Leasing With NSO[2/]	Open To Leasing With Controlled Surface Use[2/]	Open To Leasing With Timing Restrictions[3/]	Open To Leasing[3/]
High	109,517	74,727	30,320	N/A	3,354,436
Moderate		3,600	25,600		169,800
Low					327,000

[1/] Includes BLM-administered surface and surface administered by other surface management agencies or owners.

[2/] Does not include acreage that may be affected by Surface Use and Occupancy Requirements (Appendix 3).

[3/] Open to leasing under Standard Terms and Conditions, Surface Use and Occupancy Requirements, Conditions o Approval, and Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas.

Source: BLM files, 1994.

Refer to Tables 3 and 5, and Map 4. This does not include acreage that may be affected by application of the Surface Use and Occupancy Requirements.

Approximately 109,517 acres (3 percent) would be closed to leasing to protect special resources or to support other public uses. See Tables 3 and 6, and Map 4. In these areas, existing leases would continue to be developed on a case-by-case basis, However, once leases terminate, they would not be re-offered for leasing.

In the Carlsbad RMP, a number of areas were designated as special management areas. A variety of management practices were prescribed, including oil and gas stipulations. The use of the Surface Use and Occupancy Requirements, and reliance on off-road vehicle designations and visual resource management prescriptions established in the Carlsbad RMP make the continued use of oil and gas leasing stipulations unnecessary on the following areas:

Blue Spring
Bogle Flat Spring
Little McKittrick Draw HMA
Owl Spring
Preservation Spring
Southern Gypsum Soil Area
Lesser prairie chicken habitat areas
Heron rookeries
Ben Slaughter Draw
Cottonwood Spring
Fence Canyon Caves
Honest Injun Cave
KFF Caverns
Lost Cave
Pecos River Corridor
Yellow Jacket/Lair Caves

TABLE 4
AREAS OPEN TO LEASING WITH CONTROLLED SURFACE USE RESTRICTIONS
CARLSBAD RESOURCE AREA
PROPOSED PLAN

Area	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT:			
City of Carlsbad Water Well Field	29,520		
East Guadalupe Escarpment Habitat Management Area		25,600	
Subtotal	29,520	25,600	
OTHER AGENCY MANAGEMENT:			
Air Base City, Hobbs Industrial Air Park	160		
Artesia Airport	200		
Carlsbad Airport	160		
Jal County Airport	280		
Lincoln National Forest	N/A[1/]		
Subtotal	800		
Total	30,320	25,600	

[1/] Amount of affected acreage not known.

Source: BLM files, 1994

Existing oil and gas leasing stipulations for these areas would no longer be used. The proposed changes are summarized in Table 2. Other management prescribed in the Carlsbad RMP for these areas would not change, and these areas would still be managed as special management areas. If needed, standardized lease notices would be used to provide information about OHV and VRM requirements to purchasers of leases.

A portion of the Maroon Cliffs area was determined in the Carlsbad RMP to be eligible for nomination to the National Register of Historic Places as an archeological district. In this plan, the size of the proposed district would increase from the 11,783 acres originally identified in the Carlsbad RMP to 17,720 acres, to include additional important areas of cultural resources. Management of oil and gas leasing would be changed from no surface occupancy on 1,880 acres under current management to no surface occupancy on 6,840 acres and no leasing on 10,880 acres. Other management prescriptions identified in the Carlsbad RMP would remain unchanged and would apply to the entire acreage of the proposed archeological district. Refer to Tables 5 and 6, and Map 5.

The portions of the 497,000-acre potash area open to future leasing for oil and gas would continue to be leased pursuant to the Secretary's 1986 Potash Order, or subsequent revisions of the order. The Potash Stipulation, which reflects the BLM's administration of the potash area, would be applied to new leases. Generally, the Potash Stipulation allows drilling for oil and gas if the drilling does not interfere with potash mining, does not create undue waste of potash, and does not create a hazard. In abandoning wells drilled under the stipulation, infiltration of oil, gas or water into potash deposits, mines or workings must be prevented.

Lease notices would be used to alert lessees to potential special requirements on exploration, drilling or production. Lease notices covering protection of potential cave or karst areas, protection of threatened or endangered or sensitive plant or animal species, and the use of the Alkali Lake and Hackberry Lake OHV areas would remain in effect. Additional lease notices would be developed as needed.

TABLE 5
AREAS OPEN TO LEASING WITH NO SURFACE OCCUPANCY
CARLSBAD RESOURCE AREA
PROPOSED PLAN

Areas	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT:			
Black River Buckwheat Population Area	720		
Bluntnose Shiner HMA	200		
CP Hill Buckwheat Population Area	360		
Guadalupe Escarpment Scenic Area (Zone 1)	11,700		
Laguna Plata Archeological District	3,360		
Maroon Cliffs Archeological District	6,840		
Pecos River Canyon Complex ACEC/RNA	4,505		
Poco Site	265		
Pope's Well	80		
Seven Rivers Hills HMA	540		
South Texas Hill RNA		3,600	
Yeso Hills RNA	557		
Subtotal	29,127	3,600	
OTHER AGENCY MANAGEMENT:			
Avalon Reservoir	14,800		
Brantley Lake State Park	10,000		
Brantley Reservoir	21,000		
Lincoln National Forest	N/A[1/]		
Subtotal	45,800		
Total	74,927	3,600	

Note: Acreage affected by the application of the Surface Use and Occupancy Requirements is not displayed on this table, to avoid double-counting. Because of the nature of the Requirements and their use, areas listed above may also include areas to which the Requirements would be applied. Refer to Table A3-1 in Appendix 3 for estimates of additional acreage that could be affected by the Requirements.

[1/] Amount of affected acreage not known.

Source: BLM files, 1994.

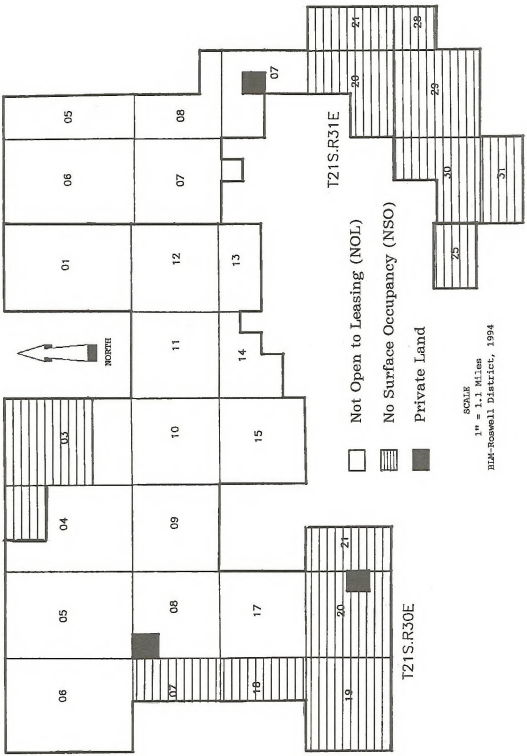
TABLE 6
AREAS CLOSED TO FUTURE LEASING
CARLSBAD RESOURCE AREA
PROPOSED PLAN

Areas	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT			
Cave Protection Zones (Dark Canyon)	10,120		
Chosa Draw ACEC	2,820		
Devils Den WSA	320		
Little Walt Canyon Quarry Site	40		
Lonesome Ridge WSA[1/]	3,505		
McKittrick Canyon WSA	200		
McKittrick Hill Cave	5,240		
Maroon Cliffs Archeological District	10,880		
Mudgetts WSA[2/]	1,060		
Subtotal	34,185		
OTHER AGENCY MANAGEMENT:			
Carlsbad Caverns National Park/Wilderness	46,530		
Gnome Site	680		
Lincoln National Forest	26,282		
Living Desert State Park	1,120		
State Militia Site	720		
Subtotal	75,332		
Total	109,517		

[1/] The 2,990-acre Lonesome Ridge ACEC is within the Lonesome Ridge WSA. The ACEC would remain closed to leasing even if the WSA is not designated as wilderness.

[2/] Acreage shown is that part of the WSA outside the cave protection zones, which would become available for leasing if the WSA is not designated as wilderness.

Source: BLM files, 1994.



MAP 5
MAROON CLIFFS
ARCHAEOLOGICAL DISTRICT
Carlsbad Resource Area

The Record of Decision for the Dark Canyon Environmental Impact Statement (1994) would guide the management of oil and gas resources in a portion of Dark Canyon just north of Carlsbad Caverns National Park (see Map 3). The actions mandated by the record of decision are summarized below:

- close the entire EIS Study Area (about 8,320 surface acres) to future oil and gas leasing;
- existing leases in the EIS Study Area subject to a NSO stipulation would remain subject to the restriction;
- producing or producible wells in the EIS Study Area may continue to produce and be maintained for that purpose;
- existing leases in the EIS Study Area outside the cave protection zone (CPZ) (about 3,280 surface acres) that are available for surface occupancy and development would be subject to mitigation measures prescribed in the EIS;
- existing leases or portions of existing leases inside the CPZ (about 9,760 surface acres) would not be available for surface occupancy, but may be developed using directional drilling from outside the CPZ.

The reader should refer to the Final Dark Canyon Environmental Impact Statement and Record of Decision for specific information on the management of the Dark Canyon area.

The Lechuguilla Cave Protection Act of 1993, establishes a cave protection zone (see Map 3), which conforms to the cave protection zone established in the Dark Canyon Environmental Impact Statement, except that an additional 360 acres are included, making this CPZ about 10,120 (surface) acres in size. Among the requirements of the Act is the withdrawal of the lands in the CPZ from mineral and geothermal leasing.

The Dark Canyon Scenic Area and ACEC (3,220 acres), and the Manhole Caves (100 acres), and Mudgetts Caves (50 acres) special management areas would be managed according to the Record of Decision for the Dark Canyon Environmental Impact Statement, which is summarized above.

Unless otherwise authorized, surface use or occupancy would be excluded in the 25,600-acre East Guadalupe Escarpment Habitat Management Area (see Map 4) as follows:

1. Within 400 meters of:

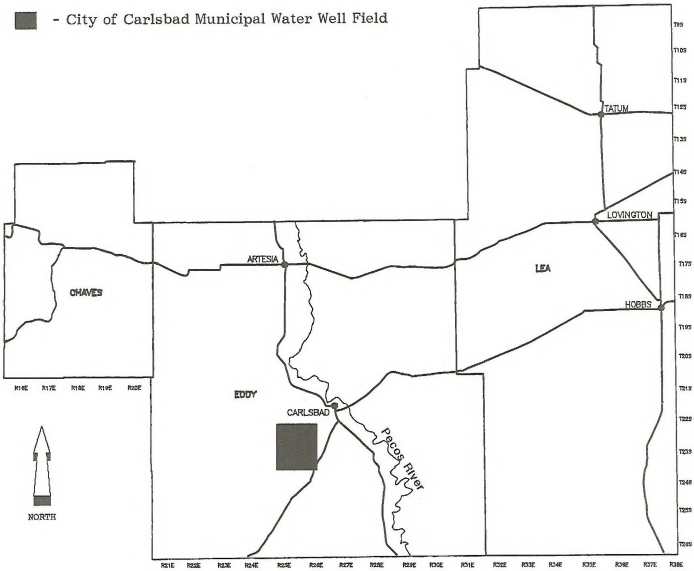
- Existing and proposed wildlife watering sites;
- Riparian areas, wetlands, springs, water wells, and ephemeral, intermittent, or perennial streams;
- Raptor nests which have been active for the past two years.

2. Slopes over 30 percent, or over 20 percent on extremely erodible or slumping soils.

3. The one hundred-year flood plain as identified through the use of: Federal Emergency Management Agency flood insurance rate maps or flood hazard boundary maps; published maps or information available from the U.S. Army Corps of Engineers, USDA Natural Resource Conservation Service, U.S. Geological Survey, or other agencies; analysis of flood data; field inspections; or, other methods.

These management prescriptions would supersede the Surface Use and Occupancy Requirements (Appendix 3) that normally would be applied to the Habitat Management Area.

A controlled surface use restriction would be applied when needed as a condition of approval for APDs for oil or gas wells proposed in the City of Carlsbad's municipal water well field, or within 3 miles of the field (Map 6). If an APD is filed in that area, the BLM would consult with the City of Carlsbad to determine the appropriate action to take. Prohibitions on blasting during well-site construction and special casing requirements would be the restrictions most often applied. This controlled surface use restriction would apply to an area of about 26,800 acres of public



SCALE
1/2" = 9.5 Miles
BLM-Roswell District, 1994

MAP 6
CITY OF CARLSBAD
MUNICIPAL WATER WELL
FIELD
Carlsbad Resource Area

surface and minerals, and about 2,720 acres of federal mineral estate under other surface ownerships.

Other Surface Management Agencies

In some cases, federal minerals in the Carlsbad Resource Area underlie lands managed by other agencies (known as "other surface management agencies"), see Map 7. The leasing requirements of other surface management agencies have been included for purposes of disclosure and to provide a complete view of oil and gas leasing in the resource area. The other surface management agencies in the Carlsbad Resource Area were asked to provide their oil and gas leasing recommendations and leasing stipulations; they are included here without modification. The leasing requirements are described below. The acreages listed refer to federal mineral estate.

Federal Aviation Administration

- Consult with FAA prior to approving occupancy at Air Base City (Hobbs Industrial Air Park) (160 acres); Carlsbad Airport (160 acres); Jal Airport (280 acres); Artesia Airport (200 acres).

Bureau of Reclamation

Brantley Reservoir (31,000 acres including the state park)

- No Surface Occupancy within the boundary of Brantley Lake State Park.
- No Surface Occupancy within one-half mile of Brantley Dam site. Drilling proposed within one-half to one mile of the Brantley Dam site would be considered on a case-by-case basis after review of the geology of the proposed drilling location. In no case would surface occupancy be allowed within one-half mile of the dam.
- Surface occupancy below natural elevation 3271' would be considered on a case-by-case basis.
- No storage facilities below elevation 3286' MSL.
- Areas not covered by the requirements mentioned above would be leased and managed under appropriate BLM Roswell District stipulations or Conditions of Approval (e.g., floodplain locations, see Appendixes 3 and 4).

Avalon Reservoir (14,800 acres)

- No Surface Occupancy within one-half mile of the Avalon Dam site.
- No Surface Occupancy below elevation 3190' MSL.
- No storage facilities below elevation 3200' MSL.
- Areas not covered by the requirements mentioned above would be leased and managed under appropriate BLM Roswell District stipulations or Conditions of Approval (e.g., floodplain locations, see Appendixes 3 and 4).

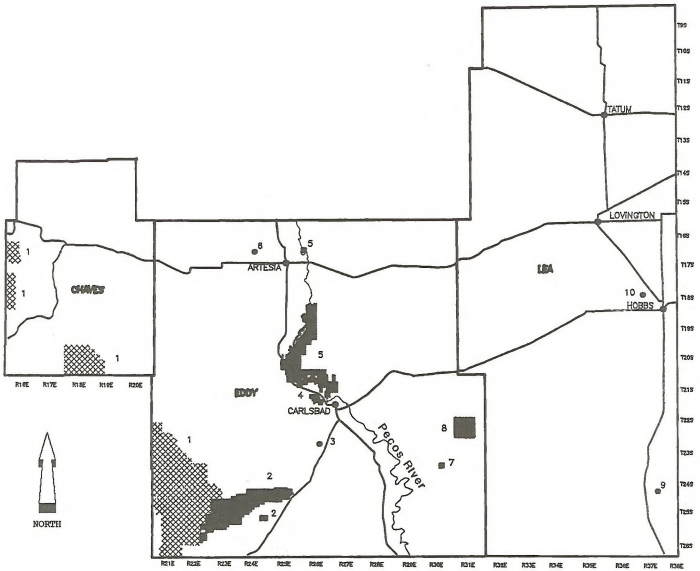
If lands presently managed by the BOR revert back to the management of the BLM, they would be leased with the above restrictions and managed under appropriate Roswell District Surface Use and Occupancy Requirements (Appendix 3) and Conditions of Approval (Appendix 4).

Department of Energy

- WIPP Site (10,245 acres), not open to leasing (Note: Although the WIPP Site remains closed to leasing, administration of the federal mineral and surface estates has been transferred from the BLM to the Department of Energy. The management of the WIPP Site will not be discussed further in this document.)
- Gnome Site (680 acres), not open to leasing

1 - Lincoln National Forest	X
2 - Carlsbad Caverns Nat'l Park	X
3 - Carlsbad Airport	X
4 - Living Desert State Park/ State Militia Site	X
5 - Bureau of Reclamation - Avalon and Brantley Reservoirs.	X
6 - Artesia Airport	X
7 - Dept. of Energy, Gnome Site	X
8 - Dept. of Energy, WIPP Site	Not Applicable
9 - Jal Airport	X
10 - Hobbs Airport	X

NOTE - Reader must refer to the tables and narrative to determine the affected acreage within each area.



SCALE
1/2" = 9.5 Miles
BLM-Roswell District, 1994

MAP 7
SURFACE MANAGEMENT BY OTHER AGENCIES
Carlsbad Resource Area

New Mexico State Parks

- Brantley Lake (10,000 acres), No Surface Occupancy (see "Bureau of Reclamation," above).
- Living Desert (1,120 acres), not open to leasing.

New Mexico State Militia

- Militia Site (720 acres), not open to leasing

U.S. Forest Service, Lincoln National Forest (175,345 acres)

- Not open to leasing, 26,282 acres
- Open to leasing, 149,063 acres. Acreage on which "no surface occupancy" would be applied has not been identified. Some acreage will have "controlled surface use." Restrictions on areas open to leasing will be determined on a case-by-case basis.

U.S. National Park Service

- Carlsbad Caverns National Park (46,530 acres), not open to leasing.

ROSWELL RESOURCE AREA

The BLM administers approximately 9,740,000 acres of federal oil and gas mineral estate in the Roswell Resource Area.

Approximately 9,308,685 acres (96 percent of the oil and gas mineral estate) would be open to leasing and development as described above under "Roswell District". This total includes controlled surface use restrictions and approximately 935,000 acres of lesser prairie chicken habitat that would be open to leasing with timing restrictions. See Tables 7 and 8, and Map 8.

Approximately 39,306 acres (< 1 percent) would be open to leasing, with a No Surface Occupancy stipulation attached to new leases. Refer to Tables 7 and 9, and Map 8. This does not include acreage that may be affected by application of the Surface Use and Occupancy Requirements.

Approximately 392,009 acres (4 percent) would be closed to leasing to protect resources or to support other public uses. See Tables 7 and 10, and Map 8. In these areas, existing leases would continue to be developed on a case-by-case basis, However, once leases terminate, they would not be re-offered for leasing.

Lease notices would be used to alert lessees to potential special requirements on exploration, drilling or production. Lease notices covering the protection of potential cave or karst areas, and the protection of threatened or endangered, or sensitive, plant or animal species would remain in effect. Additional lease notices would be developed as needed.

Other Surface Management Agencies

In some cases, federal minerals in the Roswell Resource Area underlie lands managed by other agencies (known as "other surface management agencies"). See Map 9. The leasing requirements of other surface management agencies have been included for purposes of disclosure and to provide a complete view of oil and gas leasing in the resource area. The other surface management agencies in the Roswell Resource Area were asked to provide their oil and gas leasing recommendations and leasing stipulations; they are included here without modification. The leasing requirements are described below. The acreages listed refer to federal mineral estate.

Federal Aviation Administration

- Consult with FAA prior to approving occupancy at Santa Rosa Municipal Airport (320 acres)

TABLE 7
SUMMARY OF OIL AND GAS LEASING RESTRICTIONS BY HYDROCARBON POTENTIAL (ESTIMATED SURFACE ACRES[1/]) ROSWELL RESOURCE AREA, PROPOSED PLAN

Hydrocarbon Potential	Closed To Leasing	Open To Leasing With NSO[2/]	Open To Leasing With Controlled Surface Use[2/]	Open To Leasing With Timing Restrictions[2/]	Open To Leasing[3/]
High	37,710	36,596	1,320	N/A	5,387,374
Moderate	207,668	150			2,393,004
Low	146,611	2,560			1,527,007

1/ Includes BLM-administered surface and surface administered by other surface management agencies or owners.

2/ Does not include acreage that may be affected by Surface Use and Occupancy Requirements (Appendix 3).

3/ Open to leasing under Standard Terms and Conditions, Surface Use and Occupancy Requirements, Conditions of Approval, and Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas.

Source: BLM files, 1994.

TABLE 8
AREAS OPEN TO LEASING WITH CONTROLLED SURFACE USE RESTRICTIONS ROSWELL RESOURCE AREA PROPOSED PLAN

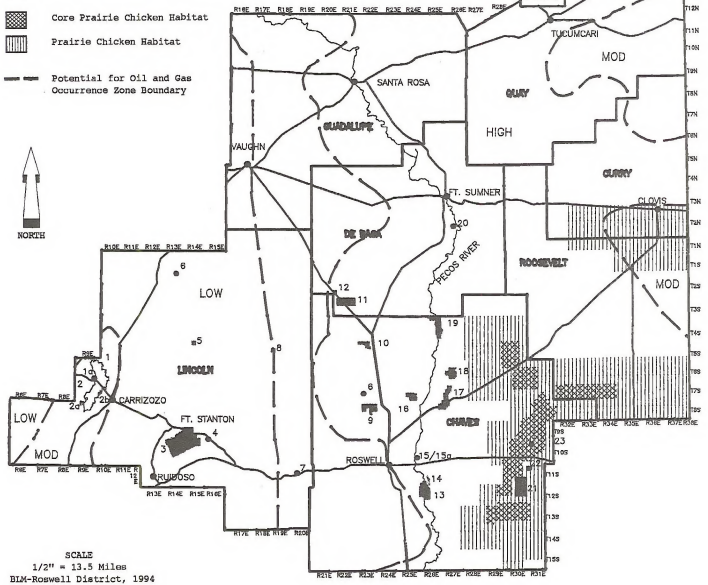
Areas	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
OTHER AGENCY MANAGEMENT:			
Santa Rosa Municipal Airport	320		
Melrose Bombing Range, buffer zone	1,000		
Total	1,320		

Source: BLM files, 1994

1 - Little Black Peak WSA	X
1a - Millrace Cave*	X
2 - Carrizozo Lava Flow WSA	X
2a - Crockett Cave*	X
2b - Valley of Fires Recreation Area	X
3 - Fort Stanton ACEC	X
4 - Rio Bonito Acquired Lands	Not Applicable
5 - Zia Christine Cave*	X
6 - Alleged UFO Crash Sites	X
7 - Border Hill NNL	X
8 - Torgac Cave*	X
9 - Angora-Corn Cave*	X
10 - Martin-Antelope Gyp Cave*	X
11 - Crystal Caverns-Devil's Well Caves*	X
12 - Coachwhip Cave*	X
13 - Overflow Wetlands ACEC	X
14 - Garnsey Bison Kill Site	X
15 - Bat Hole Cave*	X
15a- Comanche Hill	Not Applicable
16 - Cocklebur Lakes Arch. District	X
17 - Haystack Mountain OHV Area	X
18 - Haystack Butte Arch. District	X
19 - North Pecos River ACEC	X
20 - Billy the Kid Recreation Site	X
21 - Mescalero Sands ACEC	X
22 - Mescalero Sands North Dune OHV Area	X
23 - Mathers RNA	X

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the restrictions and affected acreage within each area.



MAP 8

OIL and GAS LEASING STIPULATION AREAS

Roswell Resource Area

TABLE 9
AREAS OPEN TO LEASING WITH NO SURFACE OCCUPANCY
ROSWELL RESOURCE AREA, PROPOSED PLAN

Areas	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT:			
Alleged UFO Crash Sites[1/]	1,120		2,560
Billy the Kid Recreation Site	80		
Border Hill NNL		150	
Cocklebur Lakes Arch. District	3,000		
Garnsey Bison Kill Site	520		
Haystack Butte Arch. District	3,400		
Haystack Mountain OHV Area	3,520		
Mescalero Sands ACEC	7,888		
Mescalero Sands North Dune OHV Area	1,153		
Mescalero Sands N. Dune OHV Corridor	400		
North Pecos River ACEC	2,120		
Overflow Wetlands ACEC	1,040		
Sumner Lake Tailwater	320		
Valley of Fires Recreation Area	463		
Subtotal	25,024	150	2,560
OTHER AGENCY MANAGEMENT:			
Cibola National Forest			N/A[2/]
Fort Sumner Project and Sumner Lake State Park	11,240		
Lincoln National Forest			N/A[2/]
Two Rivers Reservoir Project	see[3/]		
Tucumcari Project	7		
Ute Lake State Park	325		
Subtotal	11,572		
Total	36,596	150	2,560

Note: Acreage affected by the application of the Surface Use and Occupancy Requirements is not displayed on this table, to avoid double-counting. Because of the nature of the Requirements and their use, areas listed above may also include areas to which the Requirements would be applied. Refer to Table A3-2 in Appendix 3 for estimates of additional acreages that could be affected by the Requirements.

[1/] Two alleged sites. [2/] Amount of acreage not known.

[3/] Some portions of the Two Rivers Reservoir Project may be subject to 'no drilling' requirements. Refer to the text.

Source: BLM files, 1994

TABLE 10
AREAS CLOSED TO FUTURE LEASING
ROSWELL RESOURCE AREA
PROPOSED PLAN

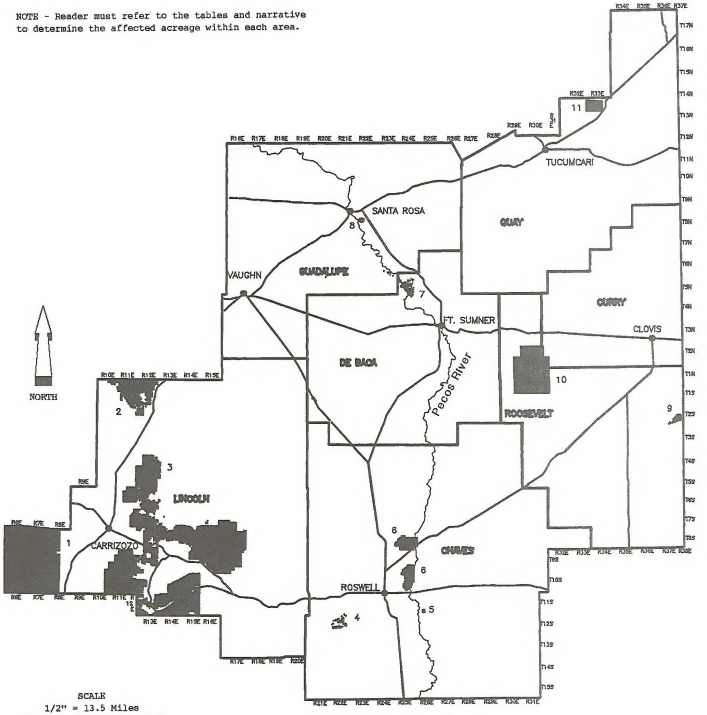
Area	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT:			
Carrizozo Lava Flow and Little Black Peak WSAs		25,312	
Fort Stanton ACEC			27,622
Mathers Research Natural Area	242		
Mescalero Sands ACEC	7,931		
North Pecos River ACEC	2,080		
Roswell Cave Complex ACEC	12,654	1,600	640
Subtotal	22,907	26,912	28,262
OTHER AGENCY MANAGEMENT:			
Bitter Lake National Wildlife Refuge	6,320		
Bottomless Lakes State Park	460		
Cibola National Forest			19,178
Grulla National Wildlife Refuge	69		
Lincoln National Forest			99,171
Melrose Bombing Range, core area	6,714		
Salt Creek Wilderness	1,240		
White Sands Missile Range		180,756	
Subtotal	14,803	180,756	118,349
Total	37,710	207,668	146,611

Source: BLM files, 1994

Surface Management By Other Agencies - Surface Stipulations for Federal Minerals, Proposed Plan

1 - White Sands Missile Range	X	8 - Santa Rosa Airport	X
2 - Cibola National Forest	X	9 - Grulla Wildlife Refuge	X
3 - Lincoln National Forest	X	10 - Melrose Bombing Range	X
4 - Two Rivers Reservoir	X	11 - Ute Lake State Park	X
5 - Bottomless Lakes State Park	X		
6 - Bitter Lake Wildlife Refuge	X		
7 - Sumner Lake	X		

NOTE - Reader must refer to the tables and narrative to determine the affected acreage within each area.



MAP 9
SURFACE MANAGEMENT BY OTHER AGENCIES
Roswell Resource Area

Bureau of Reclamation

Fort Sumner Project (11,240 acres including the state park)

- No Surface Occupancy within one-half mile of the Fort Sumner Dam site.
- No Surface Occupancy within Sumner Lake State Park.
- No Surface Occupancy below elevation 4279' MSL.
- No storage facilities below elevation 4300' MSL.
- Areas not covered by the requirements mentioned above would be leased and managed under appropriate Roswell District stipulations or Conditions of Approval (e.g., floodplain locations, see Appendixes 3 and 4).**Tucumcari Project**
- No Surface Occupancy within the boundary of Hudson Lake.
- No Surface Occupancy below within the boundary of Dry Lake, below elevation 4085' MSL.

If lands presently managed by the BOR revert back to the management of the BLM, they would be leased with the above restrictions and managed under appropriate Roswell District Surface Use and Occupancy Requirements (Appendix 3) and Conditions of Approval (Appendix 4).

Department of Defense

U.S. Air Force

- Melrose Bombing Range core area (6,714 acres), not open to leasing
- Melrose Bombing Range buffer area (1,000 acres), open to leasing with controlled surface use. No structures taller than 100 feet. Exceptions may be considered on a case-by-case basis by the Commander, Cannon AFB.

U.S. Army

- White Sands Missile Range (180,756 acres), not open to leasing

U.S. Army Corps of Engineers

- Two Rivers Reservoir Project (2,785 acres), open to leasing under appropriate Roswell District Surface Use and Occupancy Requirements (Appendix 3) and Conditions of Approval (Appendix 4), and the following conditions:

  - No drilling shall be conducted within 1,000 feet of the dam embankments, appurtenant structures and the spillway;

  - No buildings, structures, etc., shall be constructed or otherwise left in areas subject to inundation due to flood storage; and,

  - All activities shall be reported to and coordinated with the Santa Rosa Lake and Dam Reservoir manager.

New Mexico State Parks

- Sumner Lake (8,123 acres), no surface occupancy (see "Bureau of Reclamation," above).
- Ute Lake (325 acres), no surface occupancy
- Bottomless Lakes (460 acres), not open to leasing.

U.S. Fish and Wildlife Service

- Salt Creek Wilderness (1,240 acres), not open to leasing
- Grulla National Wildlife Refuge (69 acres), not open to leasing
- Bitter Lake National Wildlife Refuge (6,320 acres), not open to leasing. (The Salt Creek Wilderness is administered by the U.S. Fish

and Wildlife Service as part of Bitter Lake National Wildlife Refuge, but the 1,240-acre wilderness is not included in the acreage shown for the refuge.)

U.S. Forest Service, Cibola National Forest (34,336 acres)

- Not open to leasing, 19,178 acres
- Open to leasing, 15,158 acres. Acreage on which "no surface occupancy" would be applied has not been specifically identified, but would apply to all developed recreation sites and electronic sites, and to slopes greater than 41 percent, unless a specific site is authorized. Some acreage will have "controlled surface use." Restrictions on areas open to leasing will be determined on a case-by-case basis.

U.S. Forest Service, Lincoln National Forest (364,579 acres)

- Not open to leasing, 99,171 acres
- Open to leasing, 265,408 acres. Acreage on which "no surface occupancy" would be applied has not been identified. Some acreage will have "controlled surface use." Restrictions on areas open to leasing will be determined on a case-by-case basis.

Locatable Minerals Management

Goal: Continue to keep lands available for development of locatable minerals, while maintaining important environmental values.

Lands currently withdrawn from entry under the 1872 Mining Law or closed to mineral leasing would remain unchanged unless otherwise designated by this plan (see Table 11). The BLM would periodically review all land withdrawals to determine if restrictions continue to be necessary to protect affected resource values. At such time as a withdrawal is no longer considered to be necessary, it will be lifted and the lands returned to management under the general mining and mineral leasing laws.

All BLM-administered lands would be open to mining claim location and development, except those lands closed to mining claim location by withdrawal. BLM-administered lands currently withdrawn from all forms of appropriation under the general mining laws are summarized in Appendix 6 and shown on Map 10.

The areas summarized in Table 11 and shown on Map 10 would be withdrawn from all forms of appropriation under the general mining laws.

Solid Leasable Minerals Management

Goal: Keep lands available for leasing and production, while maintaining important environmental values.

All public lands would be open for the leasing of solid minerals, except those identified otherwise.

Lands in the following area would remain closed to leasing:

- Mathers Research Natural Area, 242 acres

Additional public lands that would be closed to solid mineral leasing are summarized in Table 12 and are shown on Map 11.

The federal mineral estate within the Bitter Lake National Wildlife Refuge would be closed to the leasing of solid minerals. Refer to Table 12 and Map 11.

The federal mineral estate along the Canadian River and major tributaries in Quay County (totalling about 4,900 acres) would be closed to the leasing of solid minerals. Refer to Table 12.

TABLE 11
AREAS WITHDRAWN FROM MINERAL ENTRY
ROSWELL RESOURCE AREA, PROPOSED PLAN

Area	Estimated Mineral Acres
BLM MANAGEMENT:	
Alleged UFO Crash Sites[1/]	3,680
Billy the Kid Recreation Site	80
Border Hill NNL	150
Carrizozo Lava Flow and Little Black Peak WSAs	25,312
Cocklebur Lakes Archeological District	3,000
Fort Stanton ACEC*	27,622
Garnsey Bison Kill Site	880
Haystack Butte Archeological District	3,400
Haystack Mountain OHV Area (staging area)	160
Mathers Research Natural Area*	242
Mescalero Sands ACEC[2/]	7,931
North Pecos River ACEC	4,200
Overflow Wetlands ACEC	1,040
Roswell Cave Complex ACEC[3/]	14,894
Spring and Seep Areas	240
Valley of Fires Recreation Area	463
Subtotal	93,294
OTHER AGENCY MANAGEMENT:	
Blackwater Draw Archeological Site*	711
Canal Right-of-Way (NM 21834)*	7
Melrose Bombing Range, core area*	6,714
Nike Hercules Defense Site*	325
NM Army National Guard Training Site*	53
Fort Sumner Dam and Sumner Lake State Park (acreage comprises three segments)*	8,123
Tucumcari Project, Conchas Canal (NM 52398)*	7
Two Rivers Reservoir Project*	2,590
Subtotal	18,530
Total	111,824

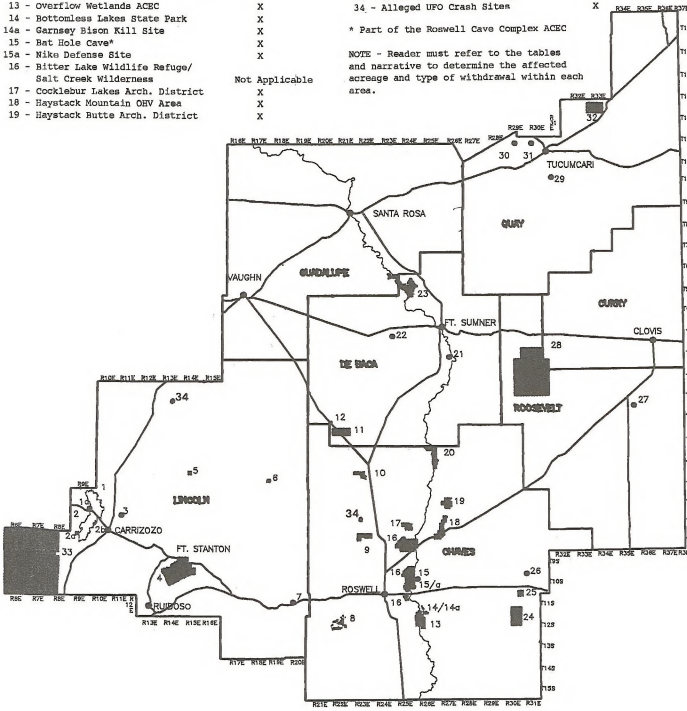
* Areas withdrawn from mineral entry as of 1994.
1/ Two alleged sites.
2/ Includes as many as 6,617 acres originally in the Mescalero Sands Recreation Complex*.
3/ Includes original 40-acre withdrawal on Torgac Cave*.

Source: BLM files, 1994.

1 - Little Black Peak WSA	X
1a - Millrace Cave*	X
2 - Carrizozo Lava Flow WSA	X
2a - Crockett Cave*	X
2b - Valley of Fires Recreation Area	X
3 - Water Power Site	X
4 - Fort Stanton ACEC	X
5 - Zia Christine Cave*	X
6 - Torgac Cave*	X
7 - Border Hills NNL	X
8 - Two Rivers Reservoir Project	X
9 - Angora Cave*	X
10 - Martin-Antelope Gyp Cave*	X
11 - Crystal Caverns/Devil's Well Caves*	X
12 - Coachwhip Cave*	X
13 - Overflow Wetlands ACEC	X
14 - Bottomless Lakes State Park	X
14a - Garnsey Bison Kill Site	X
15 - Bat Hole Cave*	X
15a - Nike Defense Site	X
16 - Bitter Lake Wildlife Refuge/ Salt Creek Wilderness	Not Applicable
17 - Cocklebur Lakes Arch. District	X
18 - Haystack Mountain OHV Area	X
19 - Haystack Butte Arch. District	X
20 - North Pecos River ACEC	X
21 - Billy the Kid Recreation Site	X
22 - FAA Navigation Site	X
23 - Summer Lake	X
24 - Mescalero Sands ACEC	X
25 - Mescalero Sands North Dune OHV Area	Not Applicable
26 - Mathers RNA	X
27 - Blackwater Draw Arch. Site	X
28 - Melrose Bombing Range	X
29 - BOR Reservoir #2	Not Applicable
30 - Tucumcari-Conchas Canal	X
31 - National Guard Training Site	X
32 - Ute Lake State Park	Not Applicable
33 - White Sands Missile Range	X
34 - Alleged UFO Crash Sites	X

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the affected acreage and type of withdrawal within each area.



MAP 10
AREAS WITHDRAWN
Roswell Resource Area

TABLE 12
AREAS CLOSED TO SOLID MINERAL LEASING
ROSWELL RESOURCE AREA
PROPOSED PLAN

Areas	Estimated Mineral Acres
BLM MANAGEMENT:	
Alleged UFO Crash Sites[1/]	3,680
Billy the Kid Recreation Site	80
Border Hill NNL	150
Carrizozo Lava Flow and Little Black Peak WSAs	25,312
Cocklebur Lakes Archeological district	3,000
Fort Stanton ACEC	27,622
Garnsey Bison Kill Site	880
Haystack Butte Archeological District	3,400
Haystack Mountain OHV Area	3,520
Mathers Research Natural Area	242
Mescalero Sands ACEC	7,931
Mescalero Sands North Dune OHV Area	610
North Pecos River ACEC	4,200
Overflow Wetlands ACEC	1,040
Roswell Cave Complex ACEC	14,894
Valley of Fires Recreation Area	463
Subtotal	97,024
OTHER AGENCY MANAGEMENT:	
Bitter Lake National Wildlife Refuge	6,320
Subtotal	6,320
Total	103,344

[1/] Two alleged sites.

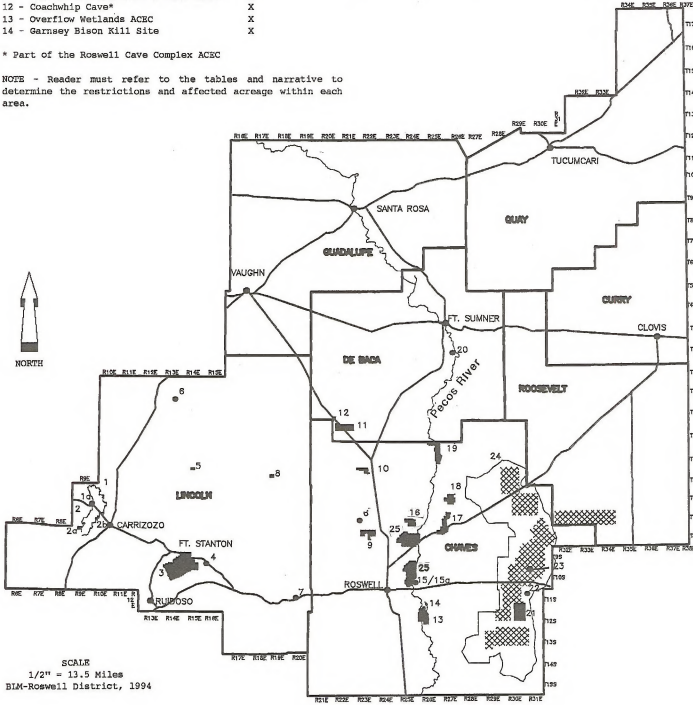
Source: BLM files, 1994.

Areas Closed, Proposed Plan

1 - Little Black Peak WSA	X	15 - Bat Hole Cave*	X
1a - Millrace Cave*	X	15a- Comanche Hill	Not Applicable
2 - Carrizozo Lava Flow WSA	X	16 - Cocklebur Lakes Arch. District	X
2a - Crockett Cave*	X	17 - Haystack Mountain OHV Area	X
2b - Valley of Fires Recreation Area	X	18 - Haystack Butte Arch. District	X
3 - Fort Stanton ACEC		19 - North Pecos River ACEC	X
3 - Feather Cave Arch. Complex	X	20 - Billy the Kid Recreation Area	X
4 - Rio Bonito Acquired Lands	Not Applicable	21 - Mescalero Sands ACEC	X
5 - Zia Christine Cave*	X	22 - Mescalero Sands North Dune OHV Area	X
6 - Alleged UFO Crash Sites	X	23 - Mathers RNA	X
7 - Border Hill NNL	X	24 - Caprock WHA	Not Applicable
8 - Torgac Cave*	X	25 - Bitter Lake Wildlife Refuge	X
9 - Angora-Corn Cave*	X	- Core Prairie Chicken Habitat	Not Applicable
10 - Martin-Antelope Gyp Cave*	X		
11 - Crystal Caverns/Devil's Well Caves*	X		
12 - Coachwhip Cave*	X		
13 - Overflow Wetlands ACEC	X		
14 - Garnsey Bison Kill Site	X		

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the restrictions and affected acreage within each area.



MAP 11

AREAS CLOSED TO LEASING OF SOLID MINERALS

Roswell Resource Area

Saleable Minerals Management

Goal: Provide mineral materials to the public while maintaining the protection necessary to prevent adverse environmental impacts and to minimize adverse impacts to public health and safety.

All lands would be open to mineral material disposals, except those identified otherwise. Pertinent sections of the Roswell District Conditions of Approval (Appendix 4) would be applied to mineral material disposals.

Mineral material pits no longer in use or selected pits in areas with a high density of pits would be reclaimed. Pits would be reclaimed to standards that would conform to, or improve, the condition of the surrounding ecosystem.

All federal mineral estate at Fort Stanton except for the Feather Cave Archeological Complex would be open to the discretionary disposal of mineral materials.

The areas that would be closed to mineral material disposals to preclude surface disturbance are summarized in Table 13 and are shown on Map 12.

TABLE 13
AREAS CLOSED TO THE DISPOSAL OF MINERAL MATERIALS
ROSWELL RESOURCE AREA, PROPOSED PLAN

Areas	Estimated Mineral Acres
Alleged UFO Crash Sites [1/]	3,680
Billy the Kid Recreation Site	80
Border Hill NNL	150
Carrizozo Lava Flow and Little Black Peak WSAs	25,312
Cocklebur Lakes Archeological District	3,000
Feather Cave Archeological Complex	330
Garnsey Bison Kill Site	880
Haystack Butte Archeological District	3,400
Haystack Mountain OHV Area	3,520
Mathers Research Natural Area	242
Mescalero Sands ACEC	7,931
Mescalero Sands North Dune OHV Area	1,336
North Pecos River ACEC	4,200
Overflow Wetlands ACEC	1,040
Roswell Cave Complex ACEC	14,894
Valley of Fires Recreation Area	463
Total	70,458

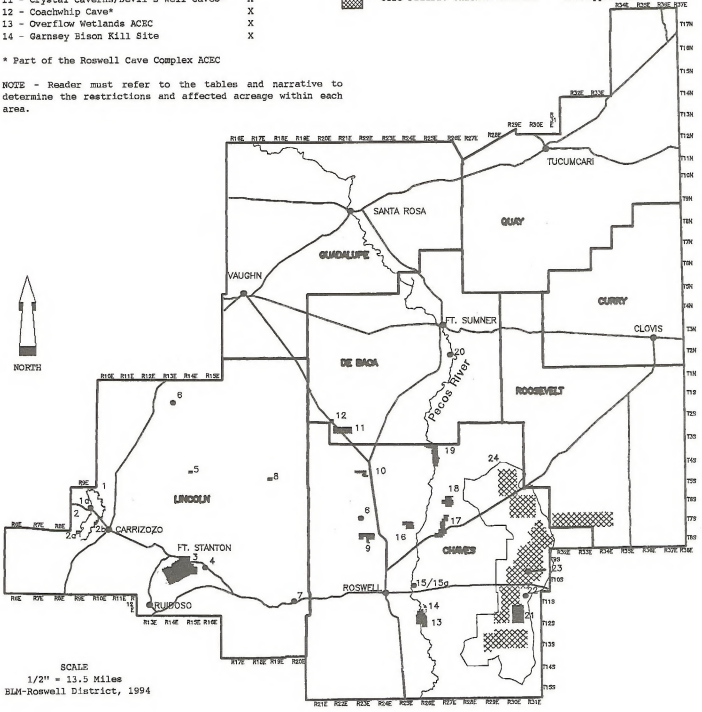
[1/] Two alleged sites.

Source: BLM files, 1994.

1 - Little Black Peak WSA	X
1a - Millrace Cave*	X
2 - Carrizozo Lava Flow WSA	X
2a - Crockett Cave*	X
2b - Valley of Fires Recreation Area	X
3 - Feather Cave at Fort Stanton	X
4 - Rio Bonito Acquired Lands	Not Applicable
5 - Zia Christine Cave*	X
6 - Alleged UFO Crash Sites	X
7 - Border Hill NNL	X
8 - Torgac Cave*	X
9 - Angora-Corn Cave*	X
10 - Martin-Antelope Gyp Cave*	X
11 - Crystal Caverns/Devil's Well Caves*	X
12 - Coachwhip Cave*	X
13 - Overflow Wetlands ACEC	X
14 - Garnsey Bison Kill Site	X
15 - Bat Hole Cave*	X
15a- Comanche Hill	Not Applicable
16 - Cocklebur Lakes Arch. District	X
17 - Haystack Mountain OHV Area	X
18 - Haystack Butte Arch. District	X
19 - North Pecos River ACEC	X
20 - Billy the Kid Recreation Area	X
21 - Mescalero Sands ACEC	X
22 - Mescalero Sands North Dune OHV Area	X
23 - Mathers RNA	X
24 - Caprock WEA	Not Applicable
- Core Prairie Chicken Habitat	Not Applicable

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the restrictions and affected acreage within each area.



MAP 12
AREAS CLOSED TO
DISPOSAL OF MINERAL MATERIALS
Roswell Resource Area

LANDS AND REALTY MANAGEMENT

Goal: Manage the public lands to support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.

Utility and Transportation System

Land use authorizations (rights-of-way, leases, permits) would be issued on a case-by-case basis. Pertinent sections of the Roswell District Conditions of Approval (Appendix 4) would be applied to land use authorizations. Whenever possible, facilities would be confined to existing alignments, minimizing width requirements and maximizing multiple occupancy. Rights-of-way locations, and terms and conditions for their use, would be identified. Rights-of-way would be granted only after site-specific analysis and development of specific conditions of approval. Rights-of-way would also be issued in accordance with New Mexico BLM's Roads Policy. Agriculture leases would be considered only when the lease is compatible with or enhances the land's identified resource values.

Landfills, hazardous waste disposal sites, and produced water disposal pits would not be authorized under rights-of-way or R&PP leases. If BLM lands are needed for these purposes, a title transfer would be considered.

A utility corridor for ancillary facilities associated with the Sierra Blanca Regional Airport would be retained. The corridor dimensions are 100 feet on each side of Lincoln County Road B-006, and 1.5 miles in length. No additional rights-of-way corridors would be designated. Rights-of-way would continue to be approved outside of designated corridors.

Public lands in the resource area would be made available for rights-of-way, permits, and leases. In defined exclusion and avoidance areas, public lands would be open to the consideration of granting rights-of-way under strict guidelines that could limit or eliminate opportunities for locating rights-of-way.

Areas proposed for exclusion of rights-of-way for major projects such as electric transmission lines; pipelines 10 inches in diameter or larger; communication lines for interstate use; federal, state and interstate highways; and major county and private roads are summarized in Table 14 and are shown on Map 13.

Lands acquired as habitat for Special Status Species or acquired for wetland/riparian values would be added to the right-of-way exclusion area for major projects. Exceptions would be considered in exclusion zones on a case-by-case basis for facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines.

Areas proposed for avoidance of rights-of-way for major projects such as electric transmission lines; pipelines 10 inches in diameter or larger; communication lines for interstate use; federal, state and interstate highways; and major county and private roads are summarized in Table 15 and are shown on Map 14. Rights-of-way for major projects and for facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines would be considered in avoidance zones on a case-by-case basis.

TABLE 14
RIGHTS-OF-WAY EXCLUSION AREAS
ROSWELL RESOURCE AREA, PROPOSED PLAN

Areas	Estimated Acres
Alleged UFO Crash Sites[1/]	3,680
Border Hill NNL	150
Carrizozo Lava Flow and Little Black Peak WSAs	25,312
Cocklebur Lakes Archeological District	3,000
Fort Stanton ACEC	24,630
Garnsey Bison Kill Site	360
Haystack Butte Archeological District	3,400
Mathers Research Natural Area	242
Mescalero Sands ACEC	7,888
North Pecos River ACEC	3,360
Overflow Wetlands ACEC	3,000
Rio Bonito[2/]	3,000
Roswell Cave Complex ACEC	14,894
U.S. Highway 380 corridor through the Carrizozo Lava Flow (applies to overhead power and telephone lines)	76
Valley of Fires Recreation Area	463
Total	93,455

[1/] Two alleged sites.

[2/] Includes the Rio Bonito acquired lands, Rio Bonito Waterfall, lands along the Rio Bonito adjacent to Fort Stanton ACEC, and NMSU facilities at Fort Stanton.

Source: BLM files, 1994

TABLE 15
RIGHTS-OF-WAY AVOIDANCE AREAS
ROSWELL RESOURCE AREA, PROPOSED PLAN

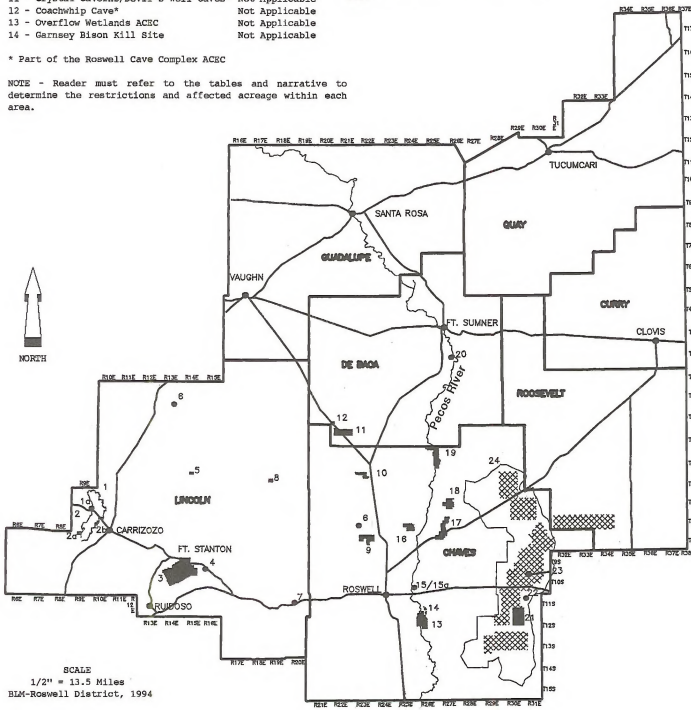
Areas	Estimated Acres
Core Prairie Chicken Habitat Area	249,400
Haystack Mountain OHV Area (applies to overhead power and telephone lines)	4,153
Mescalero Sand Dune North OHV Area (applies to overhead power and telephone lines)	610
North Pecos River ACEC	3,362
Total	257,525

Source: BLM files, 1994.

1 - Little Black Peak WSA	Not Applicable	15 - Bat Hole Cave*	Not Applicable
1a - Millrace Caves*	Not Applicable	15a- Comanche Hill	Not Applicable
2 - Carrizozo Lava Flow WSA	Not Applicable	16 - Cocklebur Lakes Arch. District	Not Applicable
2a - Crockett Cave*	Not Applicable	17 - Haystack Mountain OHV Area	X
2b - Valley of Fires Recreation Area	Not Applicable	18 - Haystack Butte Arch. District	Not Applicable
3 - Fort Stanton ACEC	Not Applicable	19 - North Pecos River ACEC	X
4 - Rio Bonito Acquired Lands	Not Applicable	20 - Billy the Kid Recreation Area	Not Applicable
5 - Zia Christine Cave*	Not Applicable	21 - Mescalero Sands ACEC	Not Applicable
6 - Alleged UFO Crash Sites	Not Applicable	22 - Mescalero Sands North Dune OHV Area	X
7 - Border Hill NNL	Not Applicable	23 - Mathers RNA	Not Applicable
8 - Torgac Cave*	Not Applicable	24 - Caprock WHA	Not Applicable
9 - Angora-Corn Cave*	Not Applicable		
10 - Martin-Antelope Gyp Cave*	Not Applicable	- Core Prairie Chicken Habitat	X
11 - Crystal Caverns/Devil's Well Caves*	Not Applicable		
12 - Coachwhip Cave*	Not Applicable		
13 - Overflow Wetlands ACEC	Not Applicable		
14 - Garnsey Bison Kill Site	Not Applicable		

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the restrictions and affected acreage within each area.



MAP 13

RIGHTS-OF-WAY EXCLUSION AREAS

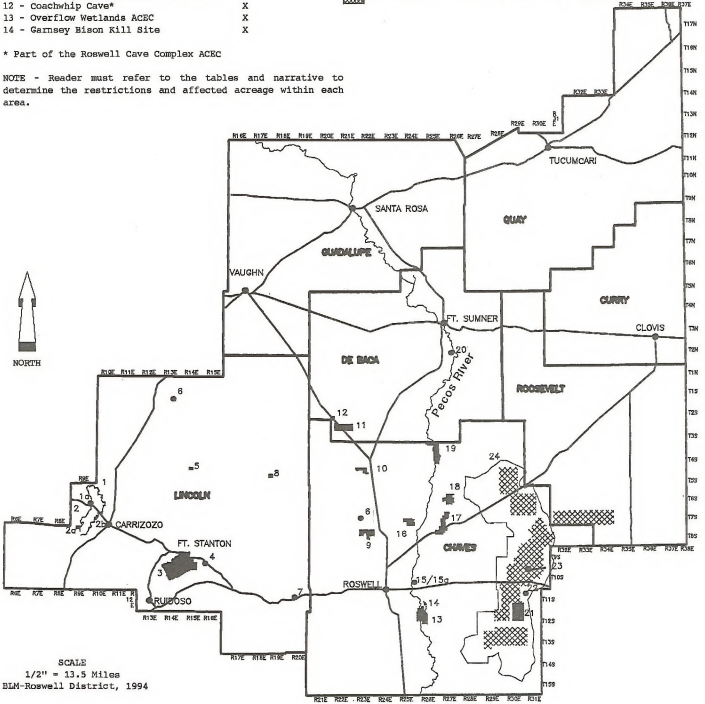
Roswell Resource Area

1 - Little Black Peak WSA	X
1a - Millrace Cave*	X
2 - Carrizozo Lava Flow WSA	X
2a - Crockett Cave*	X
2b - Valley of Fires Recreation Area	X
3 - Fort Stanton ACEC	X
4 - Rio Bonito Acquired Lands	X
5 - Zia Christine Cave*	X
6 - Alleged UFO Crash Sites	X
7 - Border Hill NNL	X
8 - Torgac Cave*	X
9 - Angora-Corn Cave*	X
10 - Martin-Antelope Gyp Cave*	X
11 - Crystal Caverns/Devil's Well Caves*	X
12 - Coachwhip Cave*	X
13 - Overflow Wetlands ACEC	X
14 - Garnsey Bison Kill Site	X

15 - Bat Hole Cave*	X
15a- Comanche Hill	Not Applicable
16 - Cocklebur Lakes Arch. District	X
17 - Haystack Mountain OHV Area	Not Applicable
18 - Haystack Butte Arch. District	X
19 - North Pecos River ACEC	X
20 - Billy the Kid Recreation Area	Not Applicable
21 - Mescalero Sands ACEC	X
22 - Mescalero Sands North Dune OHV Area	Not Applicable
23 - Mathers RMA	X
24 - Caprock WHA	Not Applicable
▨ - Core Prairie Chicken Habitat	Not Applicable

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the restrictions and affected acreage within each area.



MAP 14

RIGHTS-OF-WAY AVOIDANCE AREAS

Roswell Resource Area

Retention

To facilitate the planning process, the Roswell Resource Area was divided into three zones, based on land ownership patterns (see Map 15). Zone 1 includes the better-blocked public surface lands in Chaves, Lincoln, Guadalupe and DeBaca counties. Zone 2 includes the scattered public lands in Chaves, Lincoln, DeBaca, and Guadalupe counties. Zone 3 includes the very scattered lands in Curry, Quay, and Roosevelt Counties.

In Zone 1, the management philosophy is to retain the public lands in federal ownership. However, exchanges may be used to create better-blocked land ownership patterns and facilitate better resource management. Sales and disposals for public purposes also could be used to facilitate better management in Zone 1, in some cases. Lands acquired anywhere in the resource area would be managed for retention, irrespective of their location.

In Zone 2, the management philosophy is to dispose of public lands, primarily through exchange. Sales and disposals for public purposes also could be used, in some cases. When possible, exchanges of public lands for private lands would be conducted in the same county, to minimize the impacts to PILT payments and property taxes. In Zone 3, the management philosophy is to dispose of the public lands either through exchange or sale.

Lands in Zones 2 and 3 identified for retention during the inventory, planning, or land disposal processes, would be managed as if they are in Zone 1. Reasons for retention include the presence of T&E habitat, critical wildlife habitat, unique historical or cultural resources, or riparian areas. Criteria for determining if public lands should be retained are listed in Appendix 8.

Acquisition

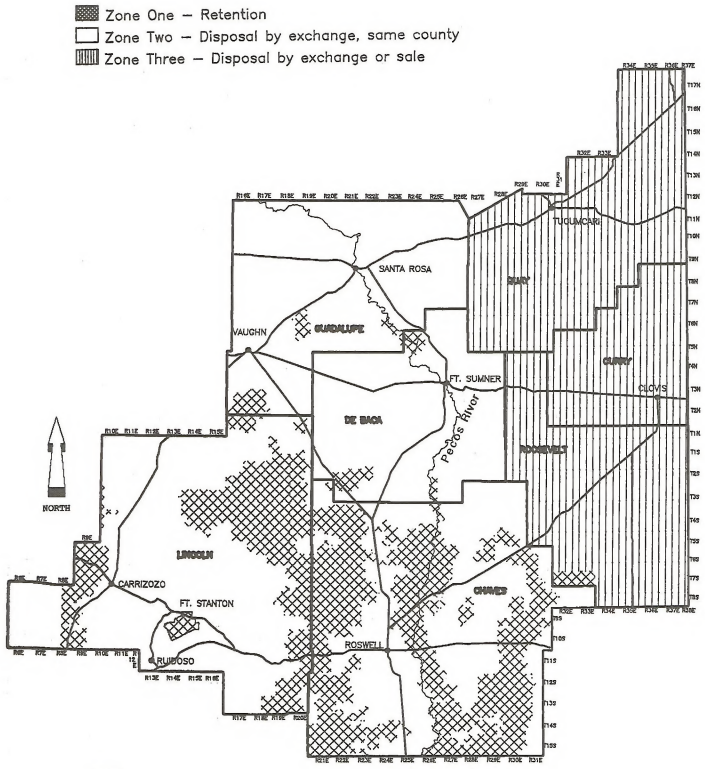
The BLM would pursue the acquisition of facilities at Fort Stanton formerly owned by New Mexico State University. The acquisition of state and private lands in wilderness study areas would be pursued if opportunities arise (refer to the "Wilderness Management" discussion in this chapter).

About 3,000 acres of private or state lands in the vicinity of Fort Stanton would be considered for acquisition to enhance management in that area.

Over the life of the plan, the acquisition of about 75,000 acres of non-federal lands or interests in non-federal lands, including those in the Fort Stanton area, would be considered on a case-by-case basis to achieve management objectives. Any lands acquired would be managed according to the management prescriptions in this plan. Refer to Appendix 8 for acquisition criteria. The areas summarized in Tables 16 and 17, shown on Map 16, and described in Appendix 9 are currently identified as being suitable for consideration for acquisition, as opportunities become available.

Easements would be acquired to provide access to public lands for recreation, wildlife, range, cultural and historical, mineral, ACEC, special management area and other resource needs, as opportunities arise. Criteria for the acquisition of easements are described in Appendix 8. Easements are needed in the following areas:

- Overflow Wetlands WHA
- Crockett Cave
- Crystal Cave
- Millrace Cave
- Little Black Peak Cinder Cone east access
- Little Black Peak Cinder Cone west access
- Carrizozo Lava Flow WSA lower windmill east access
- Mescalero Sands ACEC east access
- Mescalero Sands ACEC west access



SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

MAP 15
LAND TENURE ADJUSTMENT ZONES
Roswell Resource Area

TABLE 16
LANDS CONSIDERED SUITABLE FOR POTENTIAL ACQUISITION
ESTIMATED ACREAGES
ROSWELL RESOURCE AREA
PROPOSED PLAN

Areas	Private (Acres)	State (Acres)
Caprock WHA Expansion	8,480	18,969
Carrizozo Lava Flow and Little Black Peak area[1/]	6,316	3,458
Cedar Hills Deer Management Area		961
Fort Stanton area[2/]	1,265	1,760
Garnsey Bison Kill Site	242	320
Haystack Butte Archeological District	40	640
Haystack Mountain OHV Area	5,200	1,440
Mescalero Sands ACEC	320	1,800
Mescalero Sands North Dune OHV Area	410	
North Pecos River ACEC	1,880	1,160
Other Mescalero Sands area		2,170
Other Pecos River area	4,165	1,600
Overflow Wetlands ACEC	1,597	1,720
Pecos River Deer Management Area		2,560
Playa Lakes	1,131	630
Roswell Cave Complex ACEC	4,920	
Valley of Fires Recreation Area	337	
Total	36,303	39,188

1/ Includes the Carrizozo Lava Flow and Little Black Peak WSAs

2/ Includes the Rio Bonito Waterfall, lands along the Rio Bonito adjacent to Fort Stanton ACEC, and NMSU facilities at Fort Stanton.

Source: BLM files, 1994.

TABLE 17
ROSWELL CAVE COMPLEX ACEC, SUMMARY OF ACREAGES
(INCLUDING LANDS PROPOSED FOR CONSIDERATION FOR ACQUISITION[1/])
ROSWELL RESOURCE AREA, PROPOSED PLAN

Cave System	BLM Surface and Mineral Estate Acres	Split Estate Acres	Private Acres for Acquisition	Total Acres
Angora-Corn	4,800			4,800
Bat Hole	40			40
Coachwhip	614			614
Crockett	640			640
Crystal Caverns-Devil's Well	2,280	2,840	4,120	6,400
Martin-Antelope Gyp	2,080		320	2,400
Millrace	480		160	640
Torgac	480		160	640
Zia Christine	480	160	160	640
Totals	11,894	3,000	4,290	16,814

[1/] There are no state lands proposed for acquisition.

Source: BLM files, 1994.

Disposal

The disposal of an estimated 150,000 acres of public lands (e.g., transfer from the administration of the BLM to other federal agencies, or local or state governments, or disposal through methods such as exchange, public sale, State indemnity selection, or Recreation and Public Purposes leases or patents) would be considered on a case-by-case basis. Appendix 10 includes a list of tracts totalling 110,324 acres already identified that would be suitable for consideration for disposal. Prior to any disposal action, these lands, and any others proposed for disposal, would be evaluated for conformance with the disposal criteria listed in Appendix 8.

Access

Access to public lands would be provided throughout the planning area. Easements would be acquired to provide access to public lands for recreational, wildlife, range, cultural and historical, mineral, special management, and other resource needs. Priority for the acquisition of easements would be placed on former county roads vacated by county governments, when those roads are important for the management of the public lands. Access would be closed, or restricted, where necessary and in accordance with OHV designations, to protect public health and safety or areas with significant resource values.

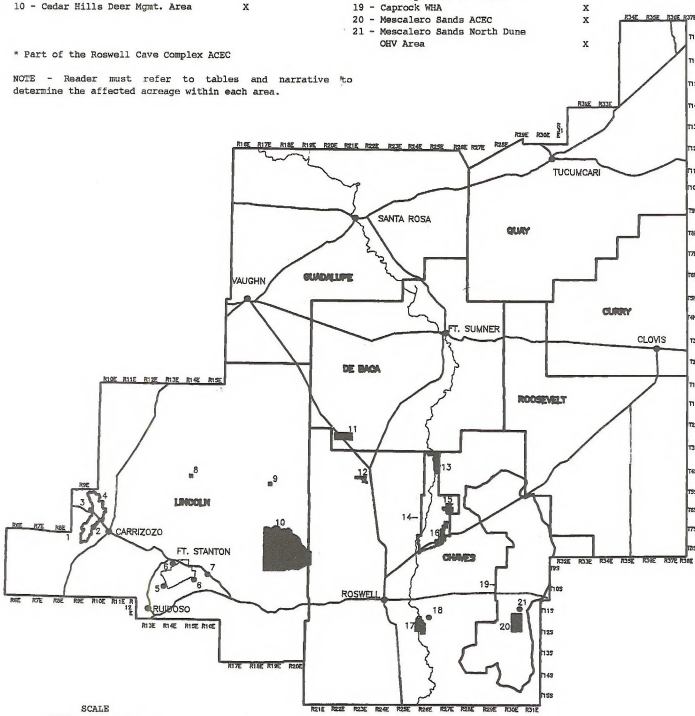
Placement of advertising signs on public lands adjacent to county roads, or roads on the BLM Transportation Plan, would be required to meet the criteria for sign placement on federal or state highways.

Potential Acquisitions, Proposed Plan

1 - Carrizozo WSA	X
2 - Valley of Fires Recreation Area	X
3 - Millrace Cave*	X
4 - Little Black Peak WSA	X
5 - Rio Bonito Waterfall	X
6 - Lands adjacent to Ft. Stanton	X
7 - Rio Bonito Acquired Lands	X
8 - Zia Christine Cave*	X
9 - Torgac Cave*	X
10 - Cedar Hills Deer Mgmt. Area	X
11 - Crystal Caverns/Devil's Well Caves*	X
12 - Martin-Antelope Gyp*	X
13 - North Pecos River ACEC	X
14 - Pecos River Deer Mgmt. Area	X
15 - Haystack Butte Arch. District	X
16 - Haystack Mountain OHV Area	X
17 - Overflow Wetlands ACEC	X
18 - Garnsey Bison Kill Site	X
19 - Caprock WHA	X
20 - Mescalero Sands ACEC	X
21 - Mescalero Sands North Dune OHV Area	X

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to tables and narrative to determine the affected acreage within each area.



SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

MAP 16
POTENTIAL ACQUISITIONS
Roswell Resource Area

Trespass

Unauthorized uses in the planning area would be resolved on a case-by-case basis. If circumstances warrant, the issuance of a permit, lease, or right-of-way authorizing the use could occur. Disposal of a parcel through sale or exchange may be considered to resolve long-standing trespass if disposal criteria are met.

Withdrawals and Classifications

Land withdrawals and classifications would be processed to afford protection to important resource values. Withdrawals that no longer serve the purposes for which they were originally intended would be revoked. Prior to revocation, withdrawn lands would be reviewed to determine if any other resource values require withdrawal protection. Existing withdrawals are shown on Map 10 and displayed in Appendix 6.
The Multiple Use Management Classification as it affects public lands in the planning area would be revoked. (Refer to Appendix 6.)

Public water reserves would be terminated where no longer needed, and acquired where the need exists.

Public lands identified as having water power values would be protected by a water power withdrawal. Water power withdrawals of public lands that lack water power values or are inconsistent with the objectives of the approved RMP would be reviewed and recommended for termination.

LIVESTOCK GRAZING MANAGEMENT

Goal: Provide effective and efficient management of allotments to maintain, improve, and monitor range conditions.

Allotment categorization and initial grazing use allocations made in the East Roswell Grazing Environmental Impact Statement (1979) and the Roswell Resource Area Management Framework Plan Amendment/Environmental Impact Statement (1984) would be used as the basis for continued livestock grazing. Changes in use allocations would continue to be made on the basis of monitoring data. Livestock grazing management decisions from previous land use plans, and the disposition of those decisions, are discussed in Appendix 19.

Forty-five existing allotment management plans (AMPs) are in various states of implementation or revision. Each year, the BLM would revise some of the 45 or begin new activity plans (an AMP or the functional equivalent of an AMP) on "I" category allotments. However, the estimated total number of both existing and new AMPs worked on each year by the BLM would average about three. Permittees, lessees, other federal or state resource management agencies, or interested citizens also may prepare activity plans for allotment management. The management plans would be prepared according to the regulations current at the time (presently 43 CFR 4120.2). The concept of multiple use would be used in the development of activity plans to address other resource concerns, such as wildlife habitat within the Macho HMP or DPC objectives for a specific plant community.

Livestock grazing following vegetative treatments would be deferred for a time period established in conjunction with the treatment method. In areas where shinnery oak is not treated, adjustments in livestock numbers, or other changes, would be considered, and implemented, if needed, to avoid conflicts with the management of habitat for the lesser prairie chicken and the sand dune lizard. Livestock grazing would also be deferred in areas burned by wildfires, if needed. The time periods for deferments would be determined on a case-by-case basis, after considering factors such as the extent of the fire, the type of vegetation burned, the intensity of the fire, and vegetation management objectives.

Within the Macho WHA, new internal pasture fences constructed of netwire would not be allowed across public lands on allotments that currently support pronghorn or on allotments in the WHA with the potential to provide suitable pronghorn habitat. Future changes in class of livestock would necessitate reconsidering the fencing standard to be used in each situation. Exceptions to this requirement are:

- The grazing permittee agrees to the construction of pronghorn passes on proposed interior fences;
- The grazing permittee agrees to allow the BLM to modify fences;
- Netwire would be used in the construction of small traps or holding pens;
- Netwire would be used in security fences around facilities such as microwave sites.

Pertinent sections of the Roswell District Conditions of Approval (Appendix 4) would be applied to approvals for construction of range improvement projects.

Rangeland improvements and vegetation treatments would continue to be implemented to improve or maintain forage production and range condition, in an effort to achieve the Desired Plant Community. Wildlife habitat and watershed management needs would be emphasized.

Specific grazing systems would be developed, in coordination with permittees, on allotments in the Caprock Wildlife Habitat Area (WHA) to meet DPC objectives.

The stocking rate of sheep in the Macho WHA in areas currently supporting pronghorn, and which meet transplant criteria, must not exceed an average of 50 sheep per section per allotment over the course of the grazing year.

Livestock grazing on the acquired Rio Bonito lands would be considered during the development of a management plan for the area, to determine if grazing should occur and under what conditions it would be allowed. Grazing preference would not be established and grazing would be used as a tool to accomplish the objectives of the management plan. On other acquired lands, establishing grazing preference would be considered on a case-by-case basis, depending on the purpose for which the lands were acquired and the management objectives for those lands.

In the Mathers Research Natural Area, the area closed to livestock grazing would be increased from about 91 acres to about 195 acres. Livestock grazing in the RNA would be allowed east of the access road and south of the east-west fence that roughly follows the south boundary of the RNA.

Management proposed would result in a reduction in the amount of livestock grazing authorized on the public lands. Table 18 summarizes estimated AUM (animal unit month) reductions that may result from certain management actions.

Livestock stocking rates would be adjusted under certain circumstances to reduce or eliminate conflicts with recreation use and development, to promote visitor safety and health, and to reduce the cost of facility maintenance. Adjustments would include excluding livestock from developed recreation facilities and within fenced exclosures around caves.

Standards for Rangeland Health and Guidelines for Grazing Management

As a completely separate effort, but related to development of the Roswell RMP, standards for rangeland health and guidelines for grazing management are being developed for public lands in New Mexico by the New Mexico Resource Advisory Council, in conjunction with the BLM. The standards and guidelines are being developed in accordance with the BLM's grazing regulations, which became effective on August 21, 1995. The time frames for the completion of the Roswell RMP and the development of statewide standards and guidelines coincide, with both efforts expected to be completed in fiscal year 1997.

The standards and guidelines will be implemented in the Roswell Resource Area to develop a more effective partnership between the ranching industry and the BLM. Among the changes resulting from the new grazing regulations and the standards and guidelines will be the opportunity for management plans to be developed by grazing permittees and lessees, or

other involved parties, in addition to the BLM. Also, ranchers would play a significantly greater role in gathering basic rangeland monitoring data on which local management decisions would be based, and in evaluating the effectiveness of livestock grazing management plans.

Because the development of the standards and guidelines is not complete, specifics relating to rangeland health and livestock grazing management cannot be included in this land use plan, prior to its completion. Once the standards and guidelines are developed, their effect will be addressed in a statewide National Environmental Policy Act document (environmental impact statement or environmental assessment) prepared by the BLM. Any needed revisions of the Roswell RMP resulting from development of the standards and guidelines and the impact statement will be made at a future date. The completed standards and guidelines will become part of the Roswell RMP and will be implemented in conjunction with the other land use decisions in the RMP.

TABLE 18
CHANGES IN GRAZING ANIMAL UNIT MONTHS
ROSWELL RESOURCE AREA, PROPOSED PLAN

PROPOSED ACTION	CHANGE IN AUMs
Surface disturbance due to oil and gas activity	-120
Garnsey Bison Kill Site[1/]	-24
Haystack Mountain OHV Area[1/]	0
Mescalero Sand Dune North OHV Area[1/]	0
Billy the Kid Recreation Site	-12
Overflow Wetlands ACEC[1/]	-120 to -674
North Pecos River ACEC	-756
Mescalero Sands ACEC	-144
Mathers Research Natural Area	-21
Roswell Cave Complex ACEC	-216
Fort Stanton ACEC[2/]	0
Feather Cave Complex[2/]	-72
Disposal of public lands[3/]	-34,260
Change in vegetation utilization levels	0
Total change in animal unit months if all proposals are implemented	-35,745 to -36,299

Note: Divide numbers (which are animal unit months) by 12 to determine the number of animal units affected.

[1/] Proposal includes a range of acreage to be excluded.

[2/] Not allocated under the Taylor Grazing Act.

[3/] Livestock grazing is likely to continue. The land would transfer from public to private ownership. AUMs are reduced because land disposals produce changes in licensed use on public lands.

Source: RMP team estimates, 1994

VEGETATION MANAGEMENT

Goal: Manage resources to maintain or improve vegetation with the emphasis on watershed protection and forage for wildlife.

General management objectives, the composition of plant communities identified as a desired plant community (DPC), and practices proposed for use in meeting the management objectives and DPC are described below. In all cases, an ecological site must be capable of attaining the DPC through natural succession, management action, or both. The percentage-ranges of the various components shown in the following tables are guidelines. The accuracy of those ranges must be confirmed through use over a period of years and in a variety of pastures. The objectives in site-specific management plans would determine whether or not one or more components of the DPC are met. Successful management would concentrate on meeting at least one, but not necessarily both, of the vegetative community objectives (percent cover or cover by percent composition). Seeding mixtures under DPC would emphasize the use of native species and avoid noxious weeds and exotic species. Refer to Appendix 11 in the Draft Roswell RMP for more information on plant communities and the development of the DPC process.

Watershed, wildlife and livestock management objectives for each community, except the Mixed Shrub Malpais Community, are to improve vegetation composition and production in areas that currently do not meet the vegetation condition objectives and maintain vegetation condition in areas that do. The management objectives for the Mixed Shrub Malpais Community are to maintain the current vegetation composition and production levels.

The standard practices that could be employed to meet a DPC would be based on thresholds and vegetation condition objectives described below for each community type. The specific practices to be used and the numbers of acres affected would be determined during activity planning, based on the results of resource monitoring. During activity planning, specific resource condition objectives would be developed for a distinct area (e.g., an allotment) based on the planned use of the area and the more general vegetation condition objectives developed in this land use plan.

The standard practices that would be employed to meet management objectives in each community are:

- Utilization levels not exceeding 45 percent of annual plant production. Utilization levels would be determined prior to green-up, and measured on key forage species.
- Projects such as fences, exclosures, water developments, erosion control structures, reseedings, or vegetative sales.
- Grazing treatments such as rest, changes in season of use, class of livestock, or stocking rates.
- Vegetation treatments, including, prescribed fire or prescribed natural fire; fuelwood sales; and biological, chemical or mechanical controls. Refer to Appendix 20 for chemical treatment practices.
- Treatment of saltcedar, as conditions warrant. Considerations in determining whether to treat include location and density of saltcedar stands, available budget and staff to conduct treatment, and objectives of proposed treatment.

Constraints on treatments for each community are:

- A project area would not be chemically treated until the chemical treatment of an adjacent project area has been in place at least five years.
- Native, deciduous tree species in all plant communities, such as hackberry, black walnut, New Mexico walnut, and desert willow, would be protected from vegetation treatments and surface disturbance.

Grassland Community

Refer to Table 19 for Grassland Community vegetation condition objectives.

Vegetation treatments to influence DPC would be considered at the following threshold levels:

Mesquite	50 plants/acre
Cholla	100 plants/acre
Catclaw	50 plants/acre
Creosote	20% of the vegetative canopy
Lechuguilla	20% of the vegetative canopy
Tarbush	20% of the vegetative canopy
Broom snakeweed	25% by weight of vegetative production
Pinon/juniper	50 trees/acre

TABLE 19
VEGETATION MANAGEMENT - GRASSLAND COMMUNITY
ROSWELL RESOURCE AREA
PROPOSED PLAN

Vegetative Community Objectives

	Percent Cover	Vegetative Cover By Percent Composition
Grass/Forbs	15-52	
Grasses		30-85
Forbs		10-15
Shrubs/Trees	3-12	
Shrubs		1-10
Bare Ground	14-60	
Small Rock/ Large Rock	0-30	
Litter	8-44	

Note: An objective of vegetation composition management would be to include 10 genera of annual and perennial fall forbs preferred by pronghorn in pastures that support pronghorn or meet the Viability Index for transplants. Fall forb diversity is, in part, dependent upon precipitation, the size of the pasture, and stocking rates of domestic sheep.

Source: BLM files, 1994.

Shinnery Oak-Dune Community

Refer to Table 20 for Shinnery Oak-Dune Community vegetation condition objectives.

The SOD community type on about 195 of the 242 acres in the Mathers Research Natural Area would not be grazed by livestock. The entire Natural Area would be used for wildlife population and habitat studies. Those studies may entail vegetative treatments and DPC may not be reached. Likewise, DPC may not be reached in the Mescalero Sands North Dune OHV Recreation Area, which would be managed primarily for off-road vehicle recreational activities, and in the proposed Mescalero Sands ACEC, which would be managed according to the prescriptions for the ACEC.

Vegetation treatments to influence DPC in the shinnery oak-dune community would be considered at the following threshold:

Mesquite	50 plants/acre
Shinnery Oak	40 percent of vegetative cover by composition

Constraints on treatments in the shinnery oak-dune community are:

- Treatments may be conducted to achieve DPC objectives in areas that are not considered suitable or occupied habitat for special status species (e.g., the sand dune lizard). Suitable and occupied habitat would not be chemically treated unless the species is removed from state or federal listing, or an alternative treatment method is developed that would not impair habitat.

Mixed Shrub Malpais Community

Watershed, wildlife and livestock management objectives for the Mixed Shrub Malpais Community are to maintain the current vegetation composition levels. This community is considered to encompass only the lava flow.

Refer to Table 21 for Mixed Shrub Malpais Community vegetation condition objectives.

Constraints on the management of vegetation in the Mixed Shrub Malpais Community are:

- No changes would be made in current livestock management.
- No projects would be constructed in the Malpais.

TABLE 20
VEGETATION MANAGEMENT -
SHINNERY OAK-DUNE COMMUNITY
ROSWELL RESOURCE AREA
PROPOSED PLAN

Vegetative Community Objectives		
	Percent Cover	Vegetative Cover By Percent Composition
Grass/Forbs	16-40	
Grasses		50-70
Forbs		10-15
Shrubs/Trees	3-17	
Shrubs		25-40
Bare Ground	5-20	
Small Rock/ Large Rock	0-1	
Litter	25-70	

Source: BLM files, 1994.

Pinon-Juniper Grassland Community

Refer to Table 22 for Pinon-Juniper Grassland Community vegetation condition objectives.

A mosaic of different vegetation structure and composition is needed to enhance wildlife habitat in this community type. Vegetation treatments to influence DPC in the pinon-juniper grassland community would be considered at the following threshold levels:

Mesquite	50 plants/acre
Cholla	100 plants/acre
Broom snakeweed	25% by weight of vegetative production
Pinon/juniper	150 trees/acre

Constraints on treatments in the pinon-juniper community are:

- Removal of trees would be done to create edge and mosaic patterns.

TABLE 21
VEGETATION MANAGEMENT -
MIXED SHRUB MALPAIS COMMUNITY
ROSWELL RESOURCE AREA
PROPOSED PLAN

	Existing Percent Cover
Grass/Forbs	15-25
Shrubs/Trees	4-10
Bare Ground	15-25
Small Rock /Large Rock	35-45
Litter	10-15

Source: BLM files, 1994.

Mixed Desert Shrub Community

Refer to Table 23 for Mixed Desert Shrub Community vegetation condition objectives.

Vegetation treatments to influence DPC in the mixed desert shrub community would be considered at the following threshold levels:

Mesquite	50 plants/acre
Cholla	100 plants/acre
Catclaw	50 plants/acre
Creosote	20% of the vegetative canopy
Lechuguilla	20% of the vegetative canopy
Tarbush	20% of the vegetative canopy
Broom snakeweed	25% by weight of vegetative production
Pinon/juniper	50 trees per acre

TABLE 22
VEGETATION MANAGEMENT -
PINON-JUNIPER GRASSLAND COMMUNITY
ROSWELL RESOURCE AREA
PROPOSED PLAN

Vegetative Community Objectives		
	Percent Cover	Vegetative Cover By Percent Composition
Grass/Forbs	15-35	
Grasses		30-40
Forbs		3-15
Shrubs/Trees	10-25	
Shrubs		20-35
Trees		30-40
Bare Ground	12-24	
Small Rock /Large Rock	5-35	
Litter	10-20	

Source: BLM files, 1994.

Drainages, Draws and Canyons Community

Refer to Table 24 for Drainages, Draws and Canyons Community vegetation condition objectives.

Vegetation treatments to influence DPC in the drainages, draws and canyons community would be considered at the following threshold levels:

Mesquite	50 plants/acre
Cholla	100 plants/acre
Catclaw	50 plants/acre
Creosote	20% of the vegetative canopy
Lechuguilla	20% of the vegetative canopy
Tarbush	20% of the vegetative canopy
Broom snakeweed	25% by weight of vegetative production

Constraints on treatments in the drainages, draws and canyons community are:

- Browse species would be protected.
- Riparian-wetland vegetation would be protected by methods such as developing riparian pastures, establishing upland waters, and conducting saltcedar control.

TABLE 23
VEGETATION MANAGEMENT -
MIXED DESERT SHRUB COMMUNITY
ROSWELL RESOURCE AREA
PROPOSED PLAN

Vegetative Community Objectives		
	Percent Cover	Vegetative Cover By Percent Composition
Grass/Forbs	11-28	
Grasses		55-75
Forbs		10-20
Shrubs/Trees	6-15	
Shrubs		15-20
Trees		1-10
Bare Ground	10-40	
Small Rock/ Large Rock	15-35	
Litter	1-12	

Source: BLM files, 1994.

TABLE 24
VEGETATION MANAGEMENT - DRAINAGES, DRAWS, AND CANYONS COMMUNITY
ROSWELL RESOURCE AREA
PROPOSED PLAN

Vegetative Community Objective	Percent Cover
Grass/Forbs	15-45
Shrubs/Trees	3-20
Bare Ground	0-60
Small Rock/Large Rock	0-40
Litter	4-43

Source: BLM files, 1994.

Riparian-Wetlands Community

There is no current management objective based on Ecological Range Site Goals for the riparian-wetlands community. Riparian management objectives require more specific plant community prescriptions to meet these goals. Current NRCS range site descriptions do not adequately describe potential plant communities for riparian-wetland areas.

Rio Bonito Acquired Lands

Vegetation management on the acquired Rio Bonito lands would be developed under specific Ecological Range Site Goals which would include agricultural crops established on existing tillable acreage using water rights obtained with the acreage. Crops, including apple orchards, and tame pasture species such as hay, winter wheat, fescues, and orchard grass, would be selected for use by wildlife. Native trees and shrubs may be planted as nursery stock for transplanting on public lands elsewhere in the Rio Bonito Valley.

Livestock grazing on the acquired Rio Bonito lands would be considered during the development of a management plan for the area, to determine if grazing should occur and under what conditions it would be allowed. Grazing preference would not be established and grazing would be used as a tool to accomplish the objectives of the management plan.

If livestock grazing is allowed, excess forage could be used for limited grazing in late winter or early spring. Livestock grazing would be managed on the Rio Bonito acquired lands so that a minimum of 55 percent of annual plant production would remain for plant community maintenance and wildlife use.

PEST MANAGEMENT

Noxious Weeds

Treatment of weed species would be coordinated and conducted with county governments. Treatments of aggressive non-native vegetation or noxious weeds on public lands would be designed to prevent their spread and to control infestations using an integrated pest management approach, based on predicted economic, ecological, and sociological effects. Chemical, mechanical, and biological methods of control would be considered. The design of projects, application of treatments, and monitoring of effects would be in accordance with the BLM's Environmental Impact Statement on Vegetation Treatment on BLM Lands and the Record of Decision for New Mexico. Refer to Appendix 20 for chemical treatment practices.

Insects

Treatment of insect infestations would be coordinated with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, pursuant to the Memorandum of Understanding between USDA and USDI for management of grasshoppers and Mormon crickets. Integrated pest management would be employed to control infestations, based on predicted economic, ecological and sociological effects. Chemical, mechanical, and biological methods of control would be considered.

Predator Control

The Master Memorandum of Understanding between the BLM and the Animal and Plant Health Inspection Service, Animal Damage Control (APHIS-ADC) would guide predator damage management (PDM) (also known as animal damage control-ADC) activities on public lands in the resource area. The BLM would coordinate with APHIS-ADC to provide for the welfare and perpetuation of wildlife and to be responsive to the needs of individuals or groups who use the public lands. Constraints on animal damage control in the resource area are described below.

Non-emergency ADC control activities on public lands would be limited to grazing allotments in Chaves and Lincoln counties. Emergency control would be allowed on other allotments in the resource area following confirmation of livestock loss by APHIS-ADC and when a request for control is made to the BLM.

Predator control operations would be permitted within authorized control areas identified each year during annual reviews of work plans for PDM. Planned predator control would occur only on allotments where a permittee or lessee requests control, where a loss has been reported or confirmed or there is a history of loss, and where APHIS-ADC has determined that a potential threat to vulnerable livestock is imminent. Control activities would be directed only at the depredating animal or local population, as appropriate. The following control methods would be allowed within authorized control areas:

- traps;
- snares;
- M-44s;
- calling;
- shooting;
- denning;
- aerial hunting; and,
- livestock protection collars.

In areas identified as swift fox habitat, which would be identified in the work plans for PDM, M-44s would not be used for control of predators, unless used as a tool of last resort in cases of confirmed active depredation where coyotes are likely to be the only animals taken. For purposes of this constraint, the area of concern is generally Chaves County, east of the Pecos River.

M-44s would not be used during hunting seasons in quail and prairie chicken hunting areas designated in work plans for PDM. For purposes of this requirement, quail and prairie chicken hunting areas generally conform to Chaves County and an area in southeastern Lincoln County.

The use of control devices (e.g., M-44s, traps and snares) would not be allowed in the following human safety zones, unless required for protection of human health or safety:

- Within one mile of any residence unless the occupant requests or approves the use of control devices;
- Within one mile of any community;
- Within 300 feet of any state of federal highway;
- Within one mile of any developed recreation site;
- Within 500 feet of BLM livestock or wildlife exclosures, water sources (e.g., tanks, streams, rivers, springs, or wildlife water developments) on public land;
- Within 300 feet of the Capitan and Big Tank/Eastwell horseback riding trails at Fort Stanton; and,
- Within 500 feet of entrances to caves in the Roswell Cave Complex ACEC or caves designated as significant under the Federal Cave Resources Protection Act.

Where control devices are used on public lands, APHIS-ADC would be required to post signs to provide adequate warning of the presence of those devices. Signs would be installed at gates commonly used as access points, and at the site

of the control device, if needed to ensure proper public notification.

The use of M-44s, when authorized (refer to requirements, above), would be conducted according to EPA restrictions on placement and use. Each M-44 device would be inspected at least once a week, weather and travel conditions permitting. Locations of M-44 devices and dates of installation would be available at the APHIS-ADC District office. M-44s would be removed within 30-days following the cessation of livestock losses in emergency control zones. Preventive control would be authorized in planned control areas as provided in EPA use restriction #7.

The use of livestock protection collars would be authorized for use only during the lambing season (generally May through August) as a tool of last resort. The use of collars would be conducted in accordance with label and use restrictions. APHIS-ADC would provide monthly reports to the BLM documenting uses of collars.

All nontarget species trapped with control devices would be released provided they are capable of self-maintenance. In accordance with APHIS-ADC policy, all leg-hold traps would use pan tension devices that exclude small, nontarget species.

The BLM's Authorized Officer would, when needed, identify areas where ADC activities on public lands should be restricted or where modification of permitted control areas should occur, when multiple use management or public health or safety reasons dictate those actions.

CULTURAL AND PALEONTOLOGICAL RESOURCE MANAGEMENT

Cultural Resources

Goal: Continue the protection of, and increase the knowledge derived from, significant archeological and historic properties known now and those discovered in the future, while providing for livestock grazing, mineral development, and other uses.

Cultural inventory surveys would continue to be required for federal actions involving surface disturbing activities except where criteria to exempt surveys are met. These criteria are:

- Previous ground disturbance has modified the surface greatly.
- Human activity within the last 50 years has created a new land surface.
- Existing Class 2 (sample survey) or equivalent inventory data are sufficient to indicate that the environmental situation did not support human occupation.
- Availability of Class 3 {Intensive survey} information of the area has been fully documented.
- Presence of a geomorphic situation that does not enhance preservation.
- A large number of negative surveys in close proximity to each other.
- Absence of criteria listed in "criteria for survey".

Eligible and potentially eligible sites would continue to be protected from damage or archaeologically treated to mitigate damage. Buffer areas of 100 feet or more would be established from the edges of sites to protect cultural resources unless the BLM determines that circumstances justify a reduced buffer area.

Approximately 20 percent of the recorded archeological sites in the resource area would be expected to be managed for conservation. The management objective for conservation would be to preserve existing archeological values. This would be achieved by protecting sites from damage by natural processes such as erosion and from man-caused damage such as illegal artifact collecting and from legally authorized surface disturbing activities. The Paleoindian sites, such as those in the Haystack Butte area would fall into this category.

Approximately five percent of the recorded archeological sites in the resource area would be expected to be managed to emphasize public values and interpretation. The management objective for public values and interpretation would be to develop archeological properties for public use. This would be achieved by scientifically treating a site, such as by excavation and developing exhibits so that the cultural property is interpreted for public recreation and education. The Garnsey Bison Kill site near Bottomless Lakes and Lower Stanton Ruin-Feather Cave near Fort Stanton are two sites that would lend themselves to interpretation.

Approximately 75 percent of the recorded archeological sites would be expected to be managed for information use. Management would emphasize the use of cultural properties for the purpose of gaining knowledge. This would be achieved by scientifically studying the property in whatever ways are appropriate in order to extract as much information as possible. Two sites which are currently being studied are the Upper Bonito I and Lower Stanton Ruin.

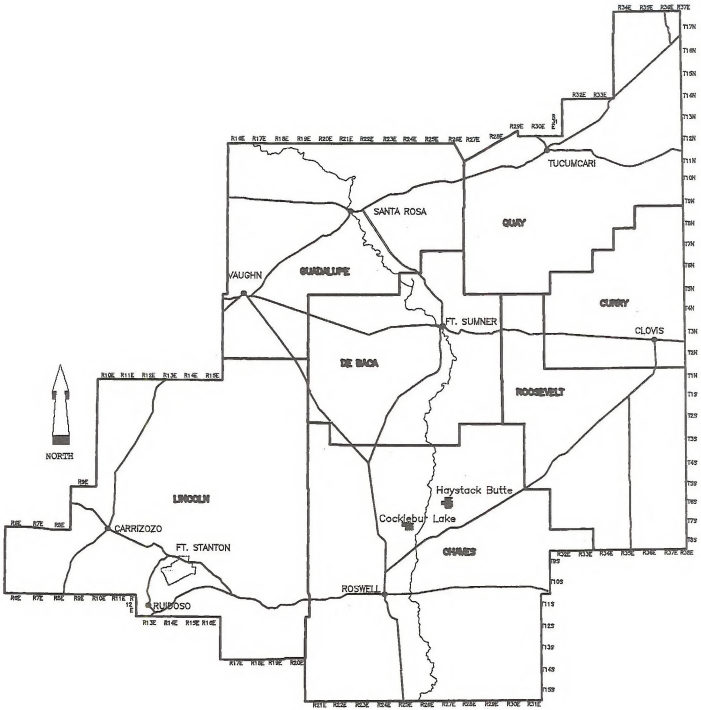
An area of 3,400 acres at Haystack Butte would be nominated for a National Register Archeological District (Map 17). Management of the District would emphasize protection of the very high density of well preserved sites. A secondary emphasis would be the study of selected sites to increase knowledge of the area. Both the outright acquisition of, or conservation easements on, about 640 acres of state land and 40 acres of private land would be considered if the opportunity arose, and added to the District, bringing the total acreage to 4,080 (see Table 16). Any acquired lands would be managed according to the management prescriptions for this plan. In order to classify the cultural properties in an area, the sites would need to be studied. Once sites were selected for interpretation or for further study to increase knowledge, activity plans would be prepared and approved before implementation. The following management actions would be employed in management of the site: (See Tables 10, 11, 12, 13, 14, and 26.)

- oil and gas: lease with no surface occupancy
- locatable minerals: withdraw from entry
- solid leasable minerals: closed to leasing
- mineral materials (saleables): closed to disposal
- rights-of-way: exclusion area for major rights-of-way
- OHV designations: OHV use limited to designated roads and trails

Approximately 3,000 acres of BLM-administered land at Cocklebur Lakes would be nominated for a National Register Archeological District (Map 17). Management of the District would emphasize protection of the very high density of well-preserved sites for the primary purpose of future interpretation. A secondary emphasis would be the study of selected sites to increase knowledge of the area. The Cocklebur Lakes area would require some amount of study in order to be able to determine the level of management required for the sites. The following management actions would be employed in management of the site: (See Tables 10, 11, 12, 13, 14, and 26.)

- oil and gas: lease with no surface occupancy
- locatable minerals: withdraw from entry
- solid leasable minerals: closed to leasing
- mineral materials (saleables): closed to disposal
- rights-of-way: exclusion area for major rights-of-way
- OHV designations: OHV use limited to designated roads and trails

Approximately 360 acres of public lands at the Garnsey Bison Kill Site would be managed to protect the bison kill site and associated archeological sites (see Map 18 in the Outdoor Recreation Management section). One



SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

MAP 17
PROPOSED ARCHAEOLOGICAL DISTRICTS
Roswell Resource Area

management goal would be to allow the public to see an archeological-paleontological site exposed in the sides of the arroyo running through the site. Some of the site would be stabilized, protecting the archeological and paleontological values. Another goal would be to generate appreciation of archeology and paleontology by developing a trail with interpretive signs and markers, and other on-site and off-site interpretive techniques. Other development of the site could include site stabilization, exhibits, and a parking area. Both the outright acquisition of, or conservation easements on, about 200 acres of private land surface and about 320 acres of state land surface would be considered to enhance the management and development of the area (see Table 16). The total acreage would then be about 880 acres. Any acquired lands would be managed according to the management prescriptions for this plan. The BLM would continue with its plans to interpret this site even if no additional lands are acquired. The following management actions would be employed in management of the site, for public surface (360 acres) and mineral estate (520 acres): (See Tables 9, 11, 12, 13, 14, and 26.)

- oil and gas: open to leasing with "no surface occupancy"
- locatable minerals: withdraw from entry
- solid leasable minerals: close to leasing
- saleable minerals: close to disposal
- rights-of-way: exclusion area for major rights-of-way
- livestock grazing: 120 acres closed to grazing
- OHV designations: 120 acres closed to OHV use; OHV use limited to designated roads and trails on 240 acres

Following a Class 3 inventory and some preliminary research, eligible sites on the acquired Rio Bonito lands would be managed for information, public values or conservation, as appropriate. The management goals would be to interpret some cultural sites for the public, research some of the sites for the information they contain and to conserve those sites that meet the criteria for conservation. If Tract 5 is acquired, an opportunity for interpretation is the early Hispanic community of Las Chosas, which would require extensive excavation and reconstruction.

There has been considerable interest in trying to identify the location of the alleged 1947 UFO crash site(s). The most commonly discussed locations are represented on maps in this document. Irrespective of location, if such an event was determined to have occurred on BLM-administered land, the BLM would interpret and protect the area(s) by:

- excluding the lands from rights-of-way location;
- withdrawing the lands from mining claim location;
- closing the lands to solid mineral leasing;
- closing the lands to disposal of mineral materials;
- leasing oil and gas with no surface occupancy stipulations; and
- closing the lands to OHV use.

The site(s) would be retained in federal ownership.

Paleontological Resources

Goal: Locate, evaluate, and classify the paleontological resources on public lands to ensure that they are given full consideration in all aspects of public land management.

Public lands would be classified at the field level according to their potential for noteworthy occurrences of fossils. Classification would use any available sources of information, including data banks, maps, knowledge of local residents, and data from paleontologists. Classification

would rank the public lands as follows:

- Condition 1: Areas that are known to contain fossil localities. Consideration of paleontological resources will be necessary if available information indicates that fossils are present in the area.

- Condition 2: Areas with exposures of geological units or settings that are likely to produce fossils. The presence of geological units from which fossils have been recovered elsewhere will require an assessment of these same units if they occur in the area of consideration.

- Condition 3: Areas that are extremely unlikely to produce fossils, based on their surface geology.

Paleontological resources would then be addressed in the BLM's activity planning and environmental analysis processes to ensure adequate protection.

In areas classified as Condition 1 or Condition 2, where potential impacts exist from proposed surface disturbing activities, the following procedures would be employed:

- A qualified paleontologist would conduct a literature review and records survey to identify areas where fossils are known to occur in the general area of the proposed action.

- A qualified paleontologist would conduct a field survey whenever a literature review and records survey indicate that vertebrate or other noteworthy occurrences of fossils are or may be present.

- A report of findings would be prepared following the completion of the field survey, literature review and records survey.

In areas determined to have noteworthy occurrences of fossils, mitigations of surface disturbing activities would be considered. A mitigation and monitoring plan based on a report of findings would be prepared recommending the types of mitigation and intensity of monitoring needed. Mitigation may include:

- avoiding fossils by redesigning or relocating a proposed project

- complete or partial salvage of the fossil(s)

- obtaining representative samples of the fossils from the project area

Management of paleontological resources would include making them available for uses such as scientific collection and research, educational and interpretive activities, and recreation.

The BLM would promote consistency among federal agencies having paleontological resource management responsibilities, and facilitate the exchange of information between federal, state, and local governments and scientific organizations concerned with the management, study, and protection of these resources.

The BLM would continue to afford the protection provided under law to fossils of scientific interest and work to increase the awareness of federal land managers and the public regarding paleontological resource management.

OUTDOOR RECREATION MANAGEMENT

Recreation Management

Goal: Ensure the continued availability of outdoor recreation opportunities and experiences. Protect the health and safety of visitors and natural, cultural, and other resource values. Stimulate public enjoyment of public land and resolve user conflicts.

Permits for commercial hunting, outfitting, and guiding operations would be issued resource area-wide. Special Recreation Use Permits (SRUPs) would be issued for other organized and commercial activities in accordance with Bureau of Land Management (BLM) guidelines and policies. Pertinent sections of the Roswell District Conditions of Approval (Appendix 4) would be applied to approvals for SRUPs.

The rules of conduct listed in Appendix 7 would be applied to all public lands in the Roswell Resource Area.

The Valley of Fires Recreation Area would continue to be managed for intensive use with emphasis on maintaining and upgrading the existing facilities. The planned development includes a visitor center, shower facilities, trail development, and campground expansion.

The BLM will identify recreational and interpretive opportunities in the Roswell Resource Area for future development and implementation in accordance with national and state goals, policies and guidelines. Developments could include facilities such as trails for non-motorized use, day use and camping areas, overlooks and waysides.

The Mescalero Sands ACEC, Fort Stanton ACEC, Overflow Wetlands ACEC, Roswell Cave Complex ACEC, Mescalero Sands North Dune OHV Area, Haystack Mountain OHV Area, Gamsey Bison Kill Site, Rio Bonito acquired lands, Billy the Kid Recreation Site and Valley of Fires Recreation Area would be designated Special Recreation Management Areas (refer to Map 18). The public lands not designated Special Recreation Management Areas would be designated an Extensive Recreation Management Area (ERMA).

At the Valley of Fires Recreation Area, approximately four miles of additional hiking trails would be developed to provide access from the campground through the lava flow to the Cooper Cabin. Other recreation facilities, trails and roads at the Valley of Fires Recreation Area would be developed and maintained in accordance with the established plan for the area. About 337 acres of private land on the east side of the presently developed area would be considered for acquisition, to provide space for future expansion of the developed area.

Lands acquired along the Rio Bonito near Lincoln (Tracts 1-4) would be managed for low intensity recreational use. All low-intensity recreation activities, including hunting, would be considered during development of a site-specific management plan. Recreation activities that would be emphasized are fishing, nature viewing and non-trail hiking. The development of two small day-use areas on Tracts 1 and 4 would be considered. Development at these sites would include graveled access roads and parking areas. If Tract 5 is acquired, future intensive development would be considered, including the possible development of a full-service campground of 25 to 50 sites. Livestock grazing would be excluded from the Tract 5 site.

The Billy the Kid Recreation Site (80 acres of BLM-administered land) would be managed and developed for a day-use area, with emphasis on providing access to the Pecos River and fishing. Development could include trails, picnic sites, roads and interpretive displays. Livestock grazing would be excluded from the site.

The Gamsey Bison Kill Site would be managed as an outdoor archaeological and paleontological classroom with emphasis on cultural and natural resource protection. Development could include exhibits, stabilization, self-guided interpretive trails, interpretive stations, and a parking area. (Refer to the "Cultural and Paleontological Resource Management" section for more discussion of this area.)

An 86-mile route along State Highway 246 from Roswell to Capitan would be developed and designated a Back Country Byway and a Lands Management Highway. Additional byways or lands management highways would be identified and evaluated for future designation and development. Future designations would be considered for roads or trails having high scenic value, unique geologic formations, botanical or biological features, historical or archaeological features, water attractions or other features with high public value.

The areas listed below and in Table 10 would be closed to the leasing of oil and gas.

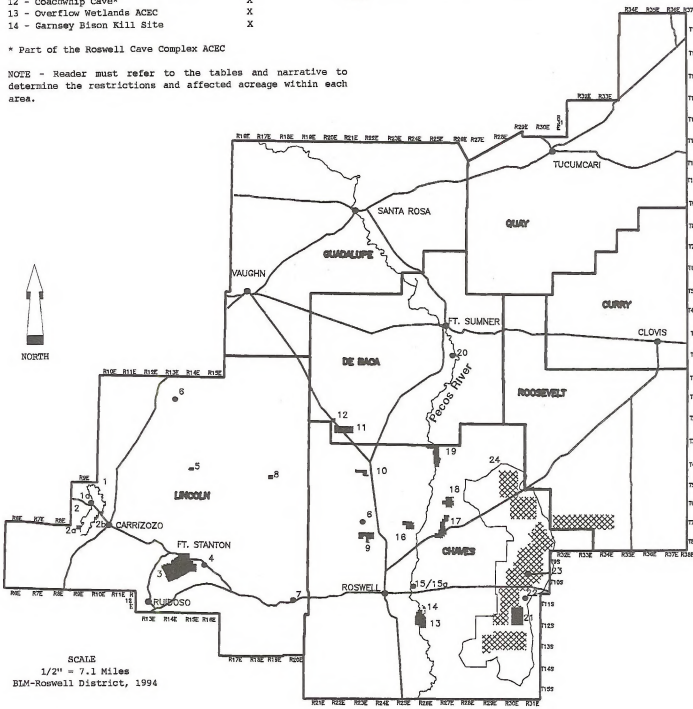
- Mathers Research Natural Area

1 - Little Black Peak WSA	Not Applicable
1a - Millrace Cave*	X
2 - Carrizozo Lava Flow WSA	Not Applicable
2a - Crockett Cave*	X
2b - Valley of Fires Recreation Area	X
3 - Fort Stanton ACEC	X
4 - Rio Bonito Acquired Lands	X
5 - Zia Christine Cave*	X
6 - Alleged UFO Crash Sites	Not Applicable
7 - Border Hill NNL	Not Applicable
8 - Torgac Cave*	X
9 - Angora-Corn Cave*	X
10 - Martin-Antelope Gyp Cave*	X
11 - Crystal Caverns-Devil's Well*	X
12 - Coachwhip Cave*	X
13 - Overflow Wetlands ACEC	X
14 - Garnsey Bison Kill Site	X

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the restrictions and affected acreage within each area.

15 - Bat Hole Cave*	X
15a- Comanche Hill	Not Applicable
16 - Cocklebur Lakes Arch. District	Not Applicable
17 - Haystack Mountain OHV Area	X
18 - Haystack Butte Arch. District	Not Applicable
19 - North Pecos River ACEC	Not Applicable
20 - Billy the Kid Recreation Area	X
21 - Mescalero Sands ACEC	X
22 - Mescalero Sands North Dune OHV Area	X
23 - Mathers RNA	Not Applicable
24 - Caprock WHA	Not Applicable
▨ - Core Prairie Chicken Habitat	Not Applicable



MAP 18
SPECIAL RECREATION MANAGEMENT AREAS
Roswell Resource Area

The areas listed below and in Table 9 would be open to the leasing of oil and gas with "no surface occupancy."

- Border Hill NNL
- Mescalero Sands North Dune OHV Area and entrance corridor
- Haystack Mountain OHV Area
- Valley of Fires Recreation Area
- Billy the Kid Recreation Site

The areas listed below and in Table 11 would be proposed for withdrawal from entry or appropriation under the public land laws, including the general mining laws.

- Little Black Peak and Carrizozo Lava Flow WSAs
- Border Hill NNL
- Haystack Mountain OHV Area (staging area)
- Valley of Fires Recreation Area
- Billy the Kid Recreation Site

The areas listed below and in Table 12 would be closed to the leasing of solid minerals.

- Little Black Peak and Carrizozo Lava Flow WSAs
- Border Hill NNL
- Valley of Fires Recreation Area
- Haystack Mountain OHV Area
- Mescalero Sands North Dune OHV area
- Billy the Kid Recreation Site

The areas listed below and in Table 13 would be closed to the disposal of mineral materials (saleable minerals).

- Little Black Peak and Carrizozo Lava Flow WSAs
- Border Hill NNL
- Haystack Mountain OHV Area
- Mescalero Sands North Dune OHV area
- Mathers Research Natural Area
- Billy the Kid Recreation Site
- Valley of Fires Recreation Area

The areas listed below and in Table 14 would be excluded from major rights-of-way.

- Rio Bonito acquired lands
- Mathers Research Natural Area
- Valley of Fires Recreation Area
- U.S. Highway 380 corridor through the Carrizozo Lava Flow (applies to overhead power and telephone lines)
- Little Black Peak and Carrizozo Lava Flow WSAs
- Border Hill NNL

The areas listed below and in Table 15 would be avoided when locating major rights-of-way.

- Mescalero Sands North Dune OHV Area (applies to overhead power and telephone lines)
- Haystack Mountain OHV Area (applies to overhead power and telephone lines)

Interpretation

The primary objective in the Roswell Resource Area's interpretive program would be to assist visitors in developing a keener awareness, appreciation and understanding of the areas they visit. The second objective would be to encourage thoughtful use of the natural resources available in the resource area to reduce impacts on natural resources. The final objective would be to promote a public understanding of BLM goals and objectives.

The main emphasis for interpretation would be placed on the Valley of Fires Recreation Area, Mescalero Sands North Dune OHV Area, Fort Stanton and the caves in the resource area (see Table 25). Emphasis would also be placed on off-site interpretive programs.

Tools used to accomplish these objectives may include: interpretive trails, exhibits, literature, waysides, environmental education, special populations programs, visitor and information stations, auto tours, campfire talks and guided walks, and the use of volunteers as docents.

TABLE 25
RESOURCE INTERPRETATION OPPORTUNITIES
ROSWELL RESOURCE AREA
PROPOSED PLAN

Special Management Area	Proposed Interpretive Themes
Billy the Kid Recreation Site	Wise Use of Public Lands
Border Hill National Natural Landmark	The Making of a Mountain
Dunahoo Hills OHV Area	Multiple Use Management of Public Lands
Fort Stanton	Historic and Prehistoric Settlements
Garnsey Bison Kill Site	Plains Indians Subsistence: Prairie, River and Mountain
Haystack Mountain OHV Area	Sandstone and All-Terrain Vehicles
Mathers RNA	Benefits of the Shinnery Oak Community
Mescalero Sands	Drifting Sands, Endemic Plants and Wildlife
Mescalero Sands North Dune OHV Area	Tread Lightly and Safely
Non-specific Use Areas	Land Use Ethics and Minimum Impact Use
Rio Bonito	Life in the Bonito Valley
Roswell Caves	Cave Ecosystems and Hazards
Valley of Fires Recreation Area	Fire, Thunder and Smoke in the Tularosa Basin

Cave and Karst Resource Management

Goal: To protect cave values while allowing for limited recreational, commercial and educational use. Research and scientific use would have priority over other uses.

Commercially-guided cave trips would continue to be allowed in Roswell Resource Area caves on a case-by-case basis. No more than 20 percent of total cave use in the resource area would be allotted to commercial use.

Big-Eared Cave, Malpais Madness, Corn Sink Hole, and Tres Ninos caves would be closed to visitor use annually from November 1 to April 15 to protect significant bat hibernacula. Seasons of use and visitor use restrictions would be applied to any other caves or portions of caves found to have significant bat hibernacula or nurseries.

Depositing human waste would not be allowed in any of the resource area's caves. Each cave user would be responsible for disposing of human waste in an approved receptacle. Smoking and spitting of chewing tobacco would be prohibited in all significant caves in the resource area.

Visitor use limits, seasons of use, and a permit system would be established for all caves where the entrance is on public land and cave resources are being affected by visitor use.

Surface disturbance would not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features. Refer to Appendix 3 for more information on this requirement.

Off-Highway Vehicle (OHV) Management

Goal: Manage OHV use to provide adequate access and reduce adverse impacts on sensitive resource values. Provide quality recreational opportunities for OHV users in conjunction with demand and safety concerns.

Inventories, public review, and transportation planning would be conducted to support road-by-road designations for roads and trails suitable for off-highway vehicle use. Proposed designations are listed in Tables 26 and 27 and shown on Map 19. All roads and trails not otherwise categorized would be designated limited to designated roads and trails for off-highway vehicle use. Pending completion of formal designations, all roads and trails would be managed as limited to existing roads and trails for off-highway vehicle use.

Until implementation plans are prepared for public lands where OHV use is limited or closed, waivers of restrictions would be considered on a case-by-case basis for activities such as maintenance of permitted range improvements, geophysical exploration, pipeline construction or maintenance, access for individuals with physical disabilities, or oil and gas operations. Any waiver must be considered and approved by the Authorized Officer in advance of the proposed use. Plans for implementing OHV use restrictions (activity plans) would be developed with public participation. The plans would describe how OHV use restrictions would be applied, would clarify permitted, licensed, emergency and official use activities, and would describe the conditions under which waivers of OHV use restrictions would be considered.

The closed-to-off-highway-vehicle-use designation on the Comanche Hill area "A" (660 acres) and area "C" (240 acres) would be retained, to help protect the scenic views from U.S. Highway 380, and to prevent waterfowl disturbance at the Bitter Lake National Wildlife Refuge.

The Haystack Mountain and Mescalero Sands North Dune OHV areas would continue to be managed for intensive OHV use, with emphasis on providing a high quality, safe play area.

The Mathers RNA (242 acres) would be closed to OHV use, except for two existing roads, which would be classified as limited to designated roads or trails.

Public lands within the present boundaries of the Carrizozo Lava Flow and Little Black Peak WSAs (25,321 acres) would be designated closed to off-highway vehicle use to protect outstanding semi-primitive values. Any state or private lands acquired within the present boundaries of the WSA's would be designated closed to OHV use. Public land and acquired state or private lands adjacent to the WSAs would be designated limited to designated roads and trails for OHV use to provide access and limit impacts to fragile soils and vegetation.

The Mescalero Sands North Dune OHV Area would be enlarged to approximately 1,553 acres, and would be designated open and managed for intensive OHV use, with emphasis on providing a quality play area for OHV's. Approximately 410 acres of private land would be considered for acquisition. An area of about 400 acres south of U.S. Highway 380 between the highway and the OHV area would be used as an entrance corridor to the area. This area would be open to oil and gas leasing with "no surface occupancy." Upgrades and development could include interpretive and safety displays with emphasis on the National Tread Lightly Program, sun shelters, rest rooms and potable water, and boundary signing. Livestock would be fenced-out from about 20 acres around existing and planned developments.

Approximately 3,500 acres at the Haystack Mountain OHV Area would be managed as an OHV Intensive Use Area and designated limited to designated roads for all-terrain vehicles less than 50 inches in width. An easement about 50 feet by 100 yards in size would be acquired through two parcels of state land to provide access to the northern portion of the OHV area.

TABLE 26
OFF-HIGHWAY VEHICLE MANAGEMENT DESIGNATIONS
ROSWELL RESOURCE AREA, PROPOSED PLAN

Designation	Areas	Acres
CLOSED	Alleged UFO Crash Sites[1/]	3,680
	Border Hill NNL	150
	Carrizozo Lava Flow and Little Black Peak WSAs	25,312
	Comanche Hill "A" Area	660
	Comanche Hill "B" Area	883
	Comanche Hill "C" Area	240
	Feather Cave Archeological Complex	330
	Fort Stanton ACEC: Rio Bonito, and Salado Creek Area	250
	Fort Stanton ACEC: Trails (105 miles)	51
	Garnsey Bison Kill Site	120
	Mathers RNA	242
	Mescalero Sands ACEC	2,478
	Overflow Wetlands ACEC	1,040
	Playa and Alkali Lakes	2,000
	Roswell Cave Complex ACEC[2/]	500
	Springs and Seeps	240
	Valley of Fires Recreation Area	400
Total Closed		38,576
LIMITED TO	Billy the Kid Recreation Site	80
DESIGNATED	Cocklebur Lakes Archeological District	3,000
ROADS OR	Dunahoo Hills (ATVs less than 50 in.)	640
TRAILS	Fort Stanton ACEC	23,999
	Garnsey Bison Kill Site	240
	Haystack Butte Archeological District	3,400
	Haystack Mountain OHV Area (ATVs less than 50 in.)	3,500
	Mescalero Sands ACEC	5,410
	Overflow Wetlands ACEC	2,100
	North Pecos River ACEC	3,360
	Pecos River Floodplain	19,200
	Remainder of Resource Area	1,372,392
	Rio Bonito Acquired Lands	1,100
	Roswell Cave Complex ACEC	11,394
	Valley of Fires Recreation Area	63
Total Limited		1,449,878
OPEN	Mescalero Sands North Dune OHV Area	1,546
Total Open		1,546

1/ Two alleged sites. 2/ Includes an additional 480 acres that fall within Wilderness Study Area OHV closures that are not reflected in the Cave ACEC closures summary.

Source: BLM files, 1994.

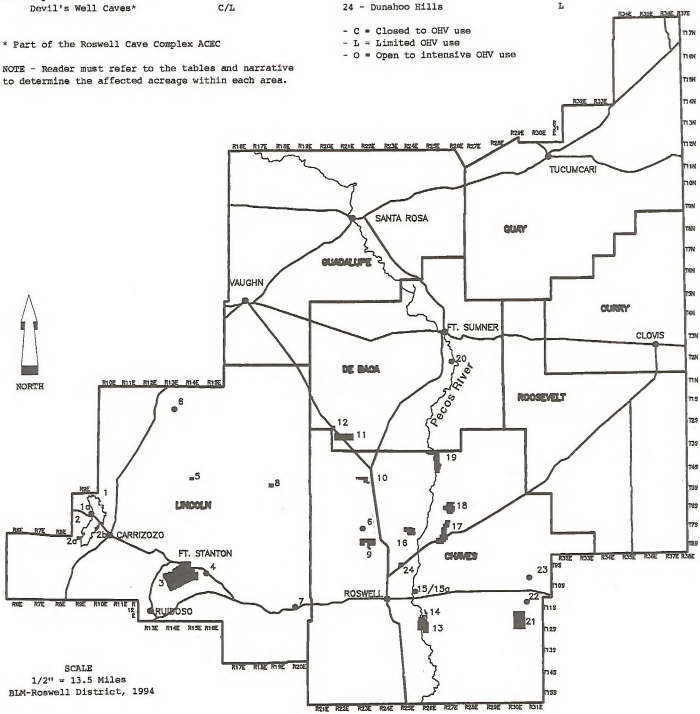
OHV Designations, Proposed Plan

1 - Little Black Peak WSA	C
1a - Millrace Cave*	C/L
2 - Carrizozo Lava Flow WSA	C
2a - Crockett Cave*	C/L
2b - Valley of Fires Rec. Area	C/L
3 - Fort Stanton ACEC	C/L
4 - Rio Bonito Acquired Lands	L
5 - Zia Christine Cave*	C/L
6 - Alleged UFO Crash Sites	C
7 - Border Hill NNL	C
8 - Torgac Cave*	C/L
9 - Angora-Corn Cave*	C/L
10 - Martin-Antelope Gyp Cave*	C/L
11 - Crystal Caverns/ Devil's Well Caves*	C/L
12 - Coachwhip Cave*	C/L
13 - Overflow Wetlands ACEC	C/L
14 - Garnsey Bison Kill Site	C/L
15 - Bat Hole Cave*	C
15a- Comanche Hill	C
16 - Cocklebur Lakes Arch. District	L
17 - Haystack Mountain OHV Area	L
18 - Haystack Butte Arch. District	L
19 - North Pecos River ACEC	L
20 - Billy the Kid Recreation Area	L
21 - Mescalero Sands ACEC	C/L
22 - Mescalero Sands North Dune OHV Area	O
23 - Mathers RNA	C
24 - Dunahoo Hills	L

* Part of the Roswell Cave Complex ACEC

NOTE - Reader must refer to the tables and narrative to determine the affected acreage within each area.

- C = Closed to OHV use
- L = Limited OHV use
- O = Open to intensive OHV use



MAP 19
OHV DESIGNATIONS
Roswell Resource Area

TABLE 27
ROSWELL CAVE COMPLEX ACEC
OFF-HIGHWAY VEHICLE DESIGNATIONS[1/]
ROSWELL RESOURCE AREA
PROPOSED PLAN

Cave System	Acres Closed	Acres Limited	Total Acres
Angora-Corn	150	4,650	4,800
Bat Hole	40		40
Coachwhip	40	574	614
Crockett	20	620	640
Crystal Caverns-Devil's Well	50	6,350	6,400
Martin-Antelope Gyp	50	2,350	2,400
Millrace	480[2/]	160	640
Torgac	40	600	640
Zia Christine	20	620	640
Totals	890	15,924	16,814

[1/] There are no public lands in the ACEC designated as open to OHV use.

[2/] Approximately 480 acres of the Millrace Cave System are within the Little Black Peak WSA, which is closed to OHV use.

Source: BLM files, 1994.

Non-motorized use of the Haystack Mountain OHV Area would be allowed. Facilities would be considered for development, such as rest rooms, sun shelters, trails, interpretive displays and picnic sites. Boundary signs would be installed.

Approximately 400 acres in the Valley of Fires Recreation Area would be designated closed to protect the viewshed from the existing campground and nature trail. The remainder of the area, 63 acres in the developed area, would be designated limited to designated roads and trails for off-highway vehicle use for maintenance needs and future campground development.

The Rio Bonito acquired lands (Tracts 1-4) would be designated limited to designated roads and trails for OHV use to protect riparian values. Tract 5, if acquired, also would be designated limited to designated roads and trails.

The 150-acre Border Hills National Natural Landmark would be designated closed to off-highway vehicle use to protect the integrity of the geologic structure.

Approximately 120 acres of the 360 federal acres at the Garnsey Bison Kill site (the core area) would be designated closed to off-highway vehicle use to protect the archaeological and paleontological sites. The remaining 240 federal acres and any acquired lands would be designated limited to designated roads and trails to protect the watershed above the bison kill site. (Refer to the "Cultural and Paleontological Resource Management" section for more discussion of this area.)

Approximately 3,000 acres in the proposed Cocklebur Lakes National Register Archeological District and about 3,400 acres in the proposed Haystack Butte National Register Archeological District would be designated limited to designated roads and trails for off-highway vehicle use.

Following inventory, if it is deemed necessary to protect a significant cave from OHV impacts, a cave exclosure would be constructed and the area within the enclosure would be designated closed to off-highway vehicle use.

A 640-acre OHV area in the Dunahoo Hills northeast of Roswell would be established, if demand warrants, and be designated limited to all-terrain vehicle use.

The 80-acre Billy the Kid Recreation Site would be designated limited to designated roads and trails for OHV use, to protect recreational values.

Approximately 19,200 acres of public lands along both sides of the Pecos River would be designated limited to designated roads and trails for OHVs to protect the floodplain, riparian zone and wetlands.

Approximately 2,000 acres encompassing 56 playas and alkali lakes, and the area within 200 meters of the playas and alkali lakes would be designated closed to off-highway vehicle use.

Approximately 640 acres encompassing the area within 200 meters of the source of about 20 springs or seeps, or within downstream riparian areas created by flows from the source or resulting from riparian area management, would be designated closed to off-highway vehicle use.

The Comanche Hills "B" Area (approximately 883 acres) would be designated closed to OHV use to protect scenic views from U.S. Highway 380 and to reduce the disturbance of waterfowl at the Bitter Lake National Wildlife Refuge.

Wilderness Management

Goal: Manage the Wilderness Study Areas (WSAs) in a manner that leaves the wilderness characteristics such as naturalness, outstanding opportunities for solitude and primitive or unconfined types of recreation unimpaired for future use and enjoyment.

The two Wilderness Study Areas, which total 25,312 acres, would continue to be managed under the Interim Management Policy and Guidelines for Land Under Wilderness Review until the areas are added to the National Wilderness Preservation System or removed from further wilderness consideration. If designated as wilderness, the areas would be managed under the Wilderness Management Policy.

As opportunities arise, the BLM would pursue the acquisition of about 10,000 acres of state and private lands in and adjacent to the WSAs, to enhance manageability and to provide unimpaired access.

The Little Black Peak and Carrizozo Lava Flow WSAs would be closed to oil and gas leasing.

The Little Black Peak and Carrizozo Lava Flow WSAs (25,312 acres) would be managed for roadless recreational opportunities.

If Congress does not designate the WSAs as wilderness, a recommendation would be made to Congress that the Little Black Peak and the Carrizozo Lava Flow areas (not necessarily the WSAs) be designated a National Conservation Area.

Trailhead parking areas adjacent to the WSAs and a limited, primitive trail system about two miles in length would be developed to the Little Black Peak cinder cone and to the Lower Windmill area in the southeast corner of Little Black Peak WSA. The development of a trail into or across the lava flow from the Valley of Fires Campground would be considered, as well. In each case, legal access would be acquired prior to development of a trail system. Development of these trails would comply with the nonimpairment criteria of the "Interim Management Policy and Guidelines for Lands Under Wilderness Review" and the "Wilderness Management Policy."

Wild and Scenic Rivers Management

There are no stream or river segments in the resource area recommended for nomination for inclusion in the National Wild and Scenic River System (refer to Appendix 2 in the Draft Roswell RMP/EIS).

Visual Resource Management

Goal: Manage public lands to protect and maintain the quality of the scenic (visual) values of these lands, while allowing for livestock grazing, mineral development and production, and other uses.

Visual resources generally would be managed to meet the Visual Resource Management (VRM) classes. All proposed management activities would be evaluated with regard to visual resource management and those projects that are compatible with the character of the natural landscape would be encouraged. No management actions are proposed that would improve or degrade visual quality to the extent that a change in any VRM class would result. Existing VRM classes are discussed in Chapter 3 of the Draft Roswell RMP/EIS and in the

Glossary. The management of visual quality in special resource management areas is summarized in Table 28.

Painting of oil field equipment and structures, and other surface facilities or equipment approved by the BLM would be conducted according to the requirements of Notice to Lessees (NTL) 87-1, New Mexico.

Recreation Opportunity Management

Goal: Manage public lands to protect and maintain recreation opportunity, while allowing for livestock grazing, mineral development and production and other uses.

Recreation opportunity would be managed so that opportunities categorized by the Recreation Opportunity Spectrum (ROS) would be maintained. No management actions are proposed that would improve or degrade recreation opportunity to the extent that a change in any ROS category would result. Existing ROS classes are discussed in Chapter 3 of the Draft Roswell RMP/EIS (see Table 99) and in the Glossary. The management of recreation opportunity in special resource management areas is summarized in Table 28.

WATERSHED MANAGEMENT

During periods of drought or other emergencies, adjustments in livestock numbers would be made to guard against damage to vegetation and soil resources.

Where soils and nontarget vegetation are disturbed, reclamation measures would be taken. These measures could include returning the land to as near its natural form as possible and reseeding with mixtures of grasses and forbs to prevent erosion.

If any new roads or trails are proposed, they would be constructed only if existing roads and trails cannot be used, and then only after a site-specific environmental assessment has been prepared.

Soil Management

Goal: Provide benefits and prevent damage to other resources by managing soil resources.

Best Management Practices (BMPs) would be used to minimize sedimentation as a cause of nonpoint source pollution in surface waters. The BMPs, based on standard operating procedures, oil and gas lease stipulations or BLM policy, would be specified in activity plans for actions that make soils more susceptible to erosion, or which impair soil productivity. Full consideration would be given to environmental benefits and economic costs of the BMPs. Activities requiring implementation of BMPs would include, but would not be limited to:

- soil disturbing activities that result in soil loss due to accelerated wind or water erosion;
- activities that reduce vegetative cover, thus exposing the soil to erosion processes, and reducing the amount of soil organic matter and soil productivity;
- activities that tend to concentrate surface runoff or steepen hydraulic gradients, thus increasing soil erosion by flowing water;
- activities that result in sediment loading directly to streams;
- activities that damage soil structure by compaction or other means; and
- activities that degrade the physical, chemical, or biological properties of the soil, such as high-intensity burns, contamination by toxic substances, or other means.

Surface disturbance would not be allowed on slopes over 20 percent or on fragile soils. The slope restriction would not apply to livestock grazing. Refer to Appendix 3 for more discussion of this requirement.

TABLE 28
SUMMARY OF VISUAL RESOURCE MANAGEMENT AND RECREATION OPPORTUNITY SPECTRUM ACREAGES IN SPECIAL RESOURCE MANAGEMENT AREAS ROSWELL RESOURCE AREA, PROPOSED PLAN

Special Resource Management Area	VRM[1] Class	ROS[1] Class	Acres in Class
Mescalero Sands North Dune OHV	II & I	R	1,500
Mescalero Sands ACEC	I	RN-R	7,886
Mescalero Sands ONA	I	RN-R	N/A
Mescalero Sands Recreation Complex	II & IV	RN-R	N/A
Mathers RNA	I	RN-R	241
Fort Stanton ACEC	II & III	RN-R	24,630
Overflow Wetlands ACEC	II	RN-R	2,987
Haystack Mountain OHV	III	RN-R	3,500
Valley of Fires Recreation Area	I & III	SPN-R	1,074[2]
Little Black Peak WSA	I	RN-R	15,072
Carrizozo Lava Flow WSA	I	SPN-RN-R	20,240
Billy the Kid Recreation Site	IV	N/A	80
Rio Bonito	III	RN	2,000
North Pecos River ACEC	IV	RN-R	3,360[3]
Garnsey Bison Kill Site	I	R	360
Cocklebur Lakes Arch. District	IV	RN-R	3,000
Haystack Butte Arch. District	III	RN-R	3,400
Roswell Cave Complex ACEC			
Angora-Corn	IV	RN-R	4,800
Bat Hole	II	R	40
Coachwhip	III	R	614
Crockett	I	R	640
Crystal	I & IV	R	2,280
Martin	IV	RN-R	2,080
Millrace	I	SPN-R	480
Torgac	IV	R	480
Zia	IV	R-RN	480
Border Hill NNL	III	R	150
Dunahoo Hills	III	R-RN	640

[1] Refer to Glossary for definitions of VRM and ROS management classes.

[2] BLM, private and state surface ownerships [3] BLM and private surface ownerships

Source: BLM files, 1994.

Surface Water Management: Quantity

Goal: Increase water availability by enhancing annual water yields, instream flows, and discharge from springs, while also reducing resource damage by floods and accelerated erosion.

Strategic watershed management plans would be developed and implemented for watersheds that are susceptible to severe long-term soil losses or gully erosion, and which have a high potential to respond to treatment.

Plans would be developed for the following watersheds susceptible to severe long-term soil loss (i.e. mean annual soil loss over the delineated area is estimated to be 1.0 ac-ft/mi^2/yr or more), shown on Map 41, in Chapter 3 of the Draft Roswell RMP/EIS:

- Rio Bonito including Salado Creek;
- Pecos River (from confluence of Yeso Creek to Bitter Lake National Wildlife Refuge); and
- the closed drainage area to Nakee Ishee Lakes.

Plans also would be developed for the following watersheds susceptible to severe gully erosion, shown on Map 41, in Chapter 3 of the Draft Roswell RMP/EIS:

- Rio Bonito including Salado Creek;
- Arroyo del Macho;
- Gallo Arroyo;
- Feliz River.

As part of the watershed management plans prepared for these six watersheds, site-specific prescriptions would be written which could include, but not be limited to, the following practices: (1) mechanical, chemical, or prescribed fire vegetation treatments; (2) plantings of native riparian plant species and seeding of herbaceous ground cover; (3) livestock grazing management by controlling livestock numbers and season of use, and by providing alternative water and mineral sources, after consultation, cooperation, and coordination with the permittee or lessee and other interested parties; (4) construction of erosion, sediment and flood control structures; (5) use of other methods determined most suitable for site-specific conditions; (6) implementation of a monitoring program, including a feedback loop which would guide management based on monitoring information.

After consultation, cooperation, and coordination with the permittee or lessee and other interested parties, springs and seeps, playas, and sinkhole lakes on public lands would be developed to improve wetland and riparian habitat, and to increase water availability. Water sources would be prioritized for development based on the following criteria:

- Presence of threatened or endangered species;
- Potential habitat for threatened or endangered species;
- Presence of perennial water or ephemeral water for extended periods;
- Presence of native riparian vegetation;
- Significant ground-water recharge areas;
- Limited alternative water sources in the area for wildlife and livestock;
- Federal ownership of both surface and subsurface estates.

Water source developments could include, but are not limited to:

- Protective exclosures;
- Native riparian plantings;
- Construction of supplemental water pipelines;
- Control of undesirable vegetation; and
- Off-site livestock waters.

Surface Water Management: Quality

Goal: Maintain or improve the quality of surface waters to support all designated uses listed by the New Mexico Water Quality Control Commission. Water quality would be based on the general and specific stream standards outlined by the WQCC.

Further degradation of water quality would be prevented whenever practicable to meet present or possible future demands, such as domestic or municipal water supplies, irrigation, livestock, wildlife, recreation, aquatic and riparian habitat, and other uses. Exceptions would be possible when water quality standards more stringent than state and federal standards would result in increased economic costs.

Best Management Practices would be developed in activity plans for actions that degrade surface water quality through nonpoint source pollution. The primary emphasis of BMPs would be on preserving water quality. Surface water quality parameters that would be addressed in BMPs include, but are not limited to: water temperature, turbidity, sediment transport and yield, chemical loading, and nutrient loading.

Due to "checkerboard" ownership in watersheds, management on BLM-administered lands alone may not be adequate to support designated stream uses. Where appropriate, cooperative agreements, MOUs, or other interagency efforts could be made to manage entire watersheds to maintain or improve water quality.

Groundwater Management

Goal: Maintain or improve groundwater quality to meet applicable state and federal standards.

Further degradation of groundwater quality would be prevented whenever practicable, even when WQCC standards allow for further degradation. Exceptions would be considered for areas specifically exempted by state or federal authority or when water quality standards more stringent than state and federal standards would result in increased economic costs.

Best Management Practices would be developed on a case-by-case basis for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with 10,000 mg/l total dissolved solids (TDS) or less. The primary emphasis of BMPs would be on preserving water quality. Groundwater quality parameters that would be addressed in BMPs include, but are not limited to: TDS, pH, volatile organic compounds, and heavy metals.

For any site proposed for pesticide treatment, the potential for groundwater contamination would be evaluated with the EPA rating system, DRASTIC (Aller et al. 1985). If the site proposed for treatment has a DRASTIC index greater than 100, it has a moderate to high potential for groundwater contamination, and would require a more detailed analysis prior to a decision being made on the proposed treatment. Factors that would be studied further include:pesticide solubility, mobility, speciation, and degradation, and highly localized recharge areas.

Water Rights Management

Goal: Protect existing public land water supplies, which include federal reserved water rights and state appropriative water rights. Comply with state water law to acquire and perfect water rights needed to carry out multiple-use management.

Actions proposed by the BLM would be evaluated for potential effects on water resources. The New Mexico State Engineer Office (SEO) would be consulted to ensure that BLM water rights are maintained, and that other users' water rights are not adversely affected.

Water use proposals filed with the SEO by entities other than the BLM that could affect water rights and uses on public lands would be evaluated for their impact on BLM water resources. Actions that would impair the quality of public land resources would be protested through procedures specified by the SEO.

The acquisition or protection of water rights would be prioritized according to the following list (in descending order of importance):

1. Streams or rivers with special designation by Congress.
2. Other streams or rivers.
3. Springs.
4. Wells.
5. Natural water holes, playas, and sinkholes.
6. Reservoirs greater than 10 ac-ft capacity.
7. Reservoirs less than 10 ac-ft capacity.

Water rights held by the BLM would be maintained primarily through:

- Beneficial use, and maintenance of manmade diversions, where appropriate. The SEO would be notified of all water uses and relevant public land authorities. Proposals that require the use of BLM-held water would include specific provisions for meeting these requirements, prior to approval by the BLM Authorized Officer.

- Other opportunities, such as MOUs, water marketing, leasing, or other coordinated efforts, according to existing law.

AIR RESOURCE MANAGEMENT

The management of public lands would emphasize the maintenance of the Class II air quality in the resource area. Mitigations would be developed on a case-by-case basis to reduce or eliminate the effects of BLM-approved surface disturbing activities on air quality. Likewise, BLM-initiated activities, such as prescribed fires, would be designed to have minimal effect on air quality and to retain the Class II air quality standard.

WILDLIFE HABITAT MANAGEMENT

Special Status Species Habitat Management

Goal: Provide protection and recovery for all federal and state-listed species. Manage occupied and potentially suitable habitat for federal and state-listed species on public land to maintain or enhance populations. Manage habitat for federal candidate species to avoid degrading habitat and further listing by either state or federal governments while allowing for mineral development and production, livestock grazing, and other uses.

Refer to Appendix 17 for listing of Special Status Species occurring or potentially occurring in the Roswell Resource Area.

The shortgrass aspect, which corresponds to the Grasslands community type, would be maintained for special status species, which require this habitat type, including the mountain plover and Baird's sparrow. Control of mesquite, cholla, snakeweed, creosote would be employed as a means of maintaining the habitat.

U.S. Fish and Wildlife Service Recovery Plans would be implemented, including the reintroduction of native special status species in suitable areas on public land in coordination and cooperation with local governments. Current plans cover the American peregrine falcon, SW bald eagle, Pecos gambusia, Kuenzler hedgehog cactus, Pecos bluntnose shiner and Black-footed ferret.

Prairie dog towns support several special status species, including the Arizona black-tailed prairie dog, western burrowing owl, mountain plover, and ferruginous hawk. The towns provide potential habitat for black-footed ferrets. Prairie dog towns would be protected from major surface disturbing activities, such as rights-of-way, and road or facility construction. Surface disturbance would not be allowed within prairie dog towns (refer to Appendix 3). Existing populations of prairie dogs would be maintained by not allowing control measures to be conducted in prairie dog towns by APHIS-ADC or grazing allottees. Maintenance of existing developments would be allowed on a case-by-case basis.

The construction of fence exclosures or barriers would be considered in crucial or critical habitat for federal threatened and endangered, federal candidate, or state-listed wildlife and plant species to protect all or portions of occupied

habitat, specific populations, or to provide for scientific research on a species and its habitat.

The federal mineral estate along the Canadian River in Quay County (totalling about 4,900 acres), would be managed to support protection of habitat for the Arkansas River shiner. Management would include the application of the surface use and occupancy requirements (Appendix 3), closure to the leasing of solid minerals, possible closure to the disposal of mineral materials, and restrictions on the exploration for and development of locatable minerals. Use restrictions would be applied as needed to protect habitat. As a result, the entire range of restrictions may not be applied to every acre of federal mineral estate. These practices could be applied to major tributaries of the Canadian, as well, if needed to protect shiner habitat.

Big Game/Upland Game Habitat Management

Goal: Maintain or improve habitat utilized by big game or upland game to provide sufficient quantity and quality of habitat (food, water, cover, space) necessary for population maintenance and expansion on public land, while providing for livestock grazing, mineral development and production, and other uses.

Big game habitat expansion and movement would be enhanced as opportunities arise by undertaking one or more of the practices listed below. These practices apply primarily to fences built for livestock control, such as boundary fences, pasture fences, and highway right-of-way fences. Fences or exclosures constructed to keep livestock or wildlife out of certain types of facilities, such as oil and gas production facilities (e.g. pits or tank batteries), would be exempt from the fence modifications described below, unless the fence itself becomes a hazard, due to its design or condition. These fences may be modified to prevent losses to both wildlife and livestock.

- Replacing existing netwire fences with barbed wire fences to facilitate the movement of wildlife between pastures;
- Installing pronghorn passes in netwire fences;
- Removing netwire fences on allotments converted from sheep to cattle;
- Lowering fences that exceed 42 inches in height;
- Removing extra strands of barbed wire to meet BLM standard 4-strand fence specifications;
- Removing extra top strands of barbed wire from netwire fences to prevent entanglement of mule deer;
- Considering terrain, forb and browse diversity, and pasture size and shape, when developing or redesigning pasture configurations;
- Disallowing the installation, or replacing, netwire fences along highway rights-of-way crossing public lands if not required for ranching operations;

Existing habitat management plans (HMPs) would be revised, as needed, to incorporate changes resulting from decisions made in this RMP. Modifications in existing HMPs would include public participation and review. Actions in existing habitat management plans would continue to be implemented.

Wildlife habitat developments and other management practices would be considered for use in improving mule deer habitat in the BLM's Mescalero Sands, Pecos River, Southwest Roswell, Cedar Hills, Fort Stanton, and Carrizozo mule deer management areas. Developments and practices include, but are not limited to:

- Construction of water developments for wildlife and livestock;
- Use of prescribed fire;
- Fuelwood sales;

- Fence modifications and exclosures;
- Aerial surveys of habitat and deer populations;
- Use of exclusion areas or buffer zones in brush control projects; and
- Modification of grazing systems, following consultation, cooperation and coordination with affected permittees or lessees, and other interested parties.

The construction of fence exclosures or barriers would be considered to protect special habitat features such as wildlife waters, springs, natural mineral licks, significant lesser prairie chicken booming grounds, or to provide for scientific research on a species and its habitat.

Prescribed burns would be conducted in selected pinon-juniper community types at Fort Stanton and the Cedar Hills area west of Roswell. For each prescribed burn the acreage to be burned and the objective of the fire would be tied to wildlife habitat management and desired plant community management objectives described in activity plans.

Surface disturbance would not be allowed within up to 200 meters of existing or planned wildlife habitat improvement projects. Refer to Appendix 3 for more information on this requirement.

Big game and upland game transplants or reintroductions on public lands would be conducted when cooperatively prescribed by the BLM and the NMDGF, following consultation and coordination with affected permittees or lessees and interested parties. Projected transplants or reintroductions include, but are not limited to:

- Pronghorn in pastures that meet the suitability criteria (see Appendix 12 in the Draft RMP/EIS);
- Mule deer in areas of low population density or in areas to enhance deer herd gene pools;
- Wild turkey at Fort Stanton and on the Rio Bonito acquired lands;
- Other big game or upland game species recommended by the New Mexico Department of Game and Fish.

If opportunities arise, acquisitions of non-federal lands would be considered in the following instances, to improve management of big game. Acquisitions in the Caprock deer management area would benefit special status species and raptor habitat management goals, as well.

- Caprock WHA: 18,969 acres of state land; 8,840 acres of private land
- Cedar Hills and Pecos River deer management areas: 3,521 acres of state land
- Rio Bonito area: 279 acres of state land

Geophysical exploration operations, drilling for oil and gas, and other development would not be allowed in lesser prairie chicken habitat during the period of March 15 through June 15, each year. Additionally, no new drilling would be allowed within up to 200 meters of leks known at the time of permitting. Refer to Appendix 3 for more discussion of these requirements.

Core prairie chicken habitat areas would be avoided when locating major rights-of-way. Refer to Table 15.

Waterfowl Habitat Management

Goal: Perpetuate a diversity and abundance of waterfowl populations in the Central Flyway by protecting and enhancing wetlands, including playa lakes, alkali lakes, sinkhole lakes and earthen tanks, while allowing a level of livestock grazing and mineral development and production that would not decrease waterfowl habitat and populations.

Develop as many as 400 acres of wetland habitat in suitable areas within the floodplain of the Pecos River. Suitability criteria include but are not limited to:

- Areas with seasonal surface waters indicative of a high water table or subsurface clay layer;
- Areas with the potential of supporting cottonwood tree groves;
- Areas that have or would receive vegetation manipulation projects (saltcedar control, prescribed fire, riparian pasture development).

Surface disturbance would not be allowed within up to 200 meters of active heronries. Refer to Appendix 3 for more discussion on this requirement.

Agricultural practices and moist soil management techniques would be used to enhance yearlong food supplies for wildlife on the lands acquired along the Rio Bonito. These practices may include but are not limited to:

- Share cropping of valuable foods (alfalfa, winter wheat, barley, pasture grasses) with a portion left as a standing crop for wildlife;
- Seasonal flood irrigation;
- Construction of irrigation ponds and wells;
- Construction of boundary and pasture fences;

Livestock grazing on the acquired Rio Bonito lands would be considered during the development of a management plan for the area, to determine if grazing should occur and under what conditions it would be allowed. Grazing preference would not be established and grazing would be used as a tool to accomplish the objectives of the management plan.

The construction of fence exclosures or barriers would be considered to protect all or portions of important wetland and riparian habitat, irrigation ponds and earthen tanks, and significant playas or alkali lakes.

Raptor Habitat Management

Goal: Provide suitable raptor habitat conditions on public lands through the conservation and management of essential habitat components, including habitat for prey species while allowing for livestock grazing and mineral development and production that would not degrade habitat components.

Nesting, migration, and wintering areas for raptors would be managed on about 926,000 acres of public lands in the Macho, Caprock, Fort Stanton and Overflow Wetland wildlife habitat areas, and along the Pecos River. Management of habitat would be focused on designated Key Raptor Areas and those identified in the future. Management practices could include developing protective fence exclosures or barriers around special habitat features such as tree groves and sinkholes, or around all or portions of important nesting areas, and constructing raptor nesting platforms. No surface occupancy would be allowed within up to 200 meters of active raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments. Refer to Appendix 3 for more discussion of this topic.

Fisheries and Aquatic Habitat Management

Goal: Manage aquatic habitat and associated natural diversity and distribution patterns of native nongame and sport fish, invertebrates, and aquatic mammals, while allowing for livestock grazing and mineral development and production that would not degrade aquatic habitat.

Construction of streambank stabilization structures, fish habitat structures, native riparian plantings, riparian pastures, saltcedar control, and spring and drainage protection could be allowed for the Rio Bonito, Salado Creek and the Pecos River. Criteria for consideration include, but are not limited to, areas that:

- Exhibit streambank sloughing;
- Lack riparian vegetation or regeneration;

- Exhibit invasion of exotic or undesirable plant species;
- Exhibit erosion of side drainages;
- Lack riparian pastures to control livestock use.

Monitor lotic and lentic systems for:

- Compliance with established water quality standards;
- Fish and macroinvertebrate productivity and composition;
- Stream channel substrate condition as it relates to watershed condition;
- Use of water rights, where established.

Native fish and sport fish introductions or transplants would be undertaken in suitable waters located on public land, in coordination with the New Mexico Department of Game and Fish. Proposed introductions include but would not be limited to:

- Rainbow, cutthroat, brown, and brook trout in the Rio Bonito;
- Bass and bluegill in irrigation ponds.

Criteria for suitable waters include, but are not limited to:

- Availability of perennial water;
- Presence of existing populations indicative of suitable habitat conditions that may need supplementing due to fishing pressure;
- No or low populations in stream segments with suitable habitat conditions (water flow, temperature, stream shading, pools & riffles, stable streambanks, water quality, substrate condition, invertebrates);
- Channel dimension and capacity.

The construction of fence exclosures or barriers would be considered to protect all or portions of important stream reaches, springs and seeps, riparian plantings, or irrigation ponds.

Riparian/Wetland and Playa Lake Management

Goal: Restore and maintain riparian/wetland areas to achieve proper functioning condition. Allow for livestock grazing, mineral development and production, and other uses that would not degrade or impair the proper functioning condition of riparian habitat. Achieve an advanced ecological status, except where resource management objectives would require an earlier successional stage.

Riparian and wetland areas would be managed to achieve an advanced ecological status, except where resource management objectives, including proper functioning condition, would require an earlier successional stage. The objective of management would be to improve riparian and wetland habitat on public lands that is nonfunctioning or functioning at risk, and maintain habitat that is in proper functioning condition. Management would be conducted even if factors beyond the BLM's control, such as flow regulations or channelization, contribute to unacceptable conditions.

Lands within 200 meters of the source of springs and seeps, and within downstream riparian areas created by flows from the source, or through riparian area management, would be considered for withdrawal from all forms of entry under the public land laws, including the general mining laws. Areas to be withdrawn would be prioritized according to one or more of the following criteria:

- Presence of threatened or endangered species that rely on the source;
- The spring or seep is located in a Special Recreation Management Area;
- The spring or seep is important for maintaining crucial or critical wildlife habitat.

If additional springs or seeps meeting these criteria are identified, they would be prioritized and considered for withdrawal, after processing of the initial list of springs and seeps was completed.

Surface disturbance would not be allowed within up to 200 meters of playas and alkali lakes, perennial streams, rivers and floodplains and springs and seeps. Refer to the Surface Use and Occupancy Requirements in Appendix 3 for more discussion on these requirements.

Springs and seeps, reservoirs and earthen tanks, important stream reaches, and significant playa and alkali lakes may be enhanced by constructing such things as protective fence exclosures or barriers, planting native vegetation, establishing vegetation for wildlife cover, controlling undesirable vegetation, constructing supplemental water pipelines to specific sites, and providing off-site livestock water. (A list of springs is in the revised Table 102, in the Proposed Plan.)

If opportunities arise, acquisition would be considered for 590 acres of state land and 1,051 acres of private land within or adjacent to playa lakes, and for 1,440 acres of state land and 2,955 acres of private land along the Pecos River. Any acquisitions in these areas would benefit riparian, wetland and playa lake management efforts.

FIRE MANAGEMENT

Goal: Limit damage to natural resources and to life and property caused by wildfire. Wherever possible, restore fire to its natural role in the ecosystem through the use of prescribed fire. Use prescribed fire as a tool for land treatment to replace or augment the use of chemical and mechanical treatments.

The construction of fire line with heavy equipment (e.g., bulldozers or graders) would be employed only:

- To protect property and public health and safety; or
- In exceptional cases (such as in saltcedar or in previously disturbed areas);
- With the approval of the Area Manager; and
- With the appropriate resource advisor(s) on the scene.

Management of areas burned by wildfires would be determined on a case-by-case basis, including the need for rehabilitation, for deferment of livestock grazing, and for other actions, such as emergency OHV closures. Considerations affecting management of burned areas include size and intensity of fire, type of vegetation burned, vegetation management objectives, and the management and use of the area prior to being burned.

Prescribed Fire

Prescribed fires ignited by the BLM would be conducted, including the re-treatment of acreage previously burned, when burning conditions are appropriate (refer to the definition of "prescription" in the Glossary). For each prescribed burn, the acreage to be burned and the objective of the fire would accomplish specific land management objectives identified in activity plans by specialists in one or more of the Resource Area's management programs. Prescribed fires generally are tied to vegetation management objectives based on vegetation types, which are: saltcedar; upland grasslands; pinon/juniper invasion areas; and areas of sacaton. Prescribed fire would be used, when possible, to treat vegetation as part of the process of attaining the identified desired plant community for a given area.

Prescribed natural fire would be employed to accomplish land management objectives when the following criteria are met:

- fire planning for the use of prescribed fire has been completed, including establishing burning prescriptions and boundaries of areas to be burned, and coordination with affected landowners and other affected interests;

- ignitions occur in the period February through May;

- funding already has been programmed for planned prescribed fires and adequate personnel and equipment are available to achieve defined objectives;

- ignitions occur in saltcedar along the Pecos River or other drainages; in juniper at Fort Stanton east of State Highway 214; in areas of sacaton; and in upland grassland communities.

Protection from Wildfire

Resource advisors would be on hand to provide advice on tactics employed during suppression under either the conditional or full fire suppression response levels.

Archeological site data on base maps and in site records would be reviewed to determine the location and significance of cultural resources before using heavy equipment to construct fire line, except where personal safety or property are threatened, or when resource values outweigh cultural values. Wherever possible, an archeologist would monitor the use of heavy equipment to ensure that cultural resources would be avoided.

The protection of wetlands and surrounding habitat for waterfowl and T&E fish in the Overflow Wetlands would be accomplished without the use of bulldozers and other heavy equipment, or chemical fire retardant.

The conditional fire suppression response level would be applied resource area-wide, with the following exceptions, where full suppression would be used.

- Protection of life or property, in any situation.

- Pecos River: Protect important vegetation, such as cottonwoods and willows, in riparian/wetland habitat within the 100-year floodplain. Limited use of machines, such as bulldozers, may be required, based on the advice of a resource advisor. For fires in saltcedar, resources such as bulldozers or chemical fire retardant could be employed to limit the spread of fire to the smallest possible area.

- Caprock WHA: For wildfires occurring in treated pastures in the months of April through January, full suppression may be employed to protect wildlife habitat. In February and March, and depending on the location of the fire relative to previous vegetation treatments, suppression activities may occur at the conditional level and may be limited to monitoring the wildfire.

- Fort Stanton: Protection of the Kuenzler hedgehog cactus, and the entrance of Fort Stanton Cave, would be accomplished with full suppression, except that heavy equipment would not be used to construct fire line.

- Playas larger than 20 acres, springs and seeps, other riparian areas: Fire suppression would include protection of these areas from surface disturbance and the effects of chemical fire retardant, by prohibiting the use of heavy equipment and retardant drops in riparian areas. The use of engines would be allowed, keeping off-road use to the minimum needed to fully suppress the fire.

- Caves and karst areas: Fire suppression in cave and karst areas would include protection of caves, cave resources and karst features from surface disturbance by prohibiting the use of bulldozers and other heavy equipment to construct fire line within 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features.

- Valley of Fires Recreation Area: Protection of the recreation area would be accomplished without the use of heavy equipment to construct fire line.

- Border Hills Structural Zone National Natural Landmark: The use of heavy equipment to

construct fire line within this area would be prohibited.

- Steep slopes: Fire line would not be constructed with bulldozers or other heavy equipment on slopes greater than 20 percent, or greater than 10 percent on fragile soils, except to protect life or property.

HAZARDOUS MATERIALS MANAGEMENT

For BLM-authorized activities that involve hazardous materials or their use, precautionary measures would be used to guard against releases or spills into the environment. The transportation storage, and handling of hazardous materials would be conducted in accordance with manufacturers' specifications and applicable laws, such as the Resource Conservation and Recovery Act and the Emergency Planning and Community Right-To-Know Act.

The sale or transfer of public lands on which storage or disposal of hazardous substances has been known to occur would require public notification of the type and quantity of such substances.

Bureau of Land Management-administered public land sites contaminated with hazardous wastes would be reported, secured, cleaned up, or otherwise remedied according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations. If at all possible, the responsible parties would bear the financial burden of cleanup and resource damage costs.

If hazards are identified on BLM-administered public lands, the BLM would provide appropriate warnings and establish precautions for safety hazards associated with the use of those lands.

The BLM would conduct its own activities in a manner that reduces the amount or toxicity of waste generated from those activities.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

The boundaries of the ACECs described below have been established based on the presence of resources and opportunities for efficient management, irrespective of land ownership. The inclusion of other ownerships in ACECs is for purposes of disclosure and does not mean those lands would be designated as part of an ACEC, or that the management proposed in this plan would be applied to those lands. The acquisition of non-federal lands within ACECs is included in the management proposed in this plan. If non-federal lands are acquired, those lands could then become part of a designated ACEC and be managed according to the management proposed in this plan, without additional land use planning.

See Map 20 for the locations of the proposed ACECs. Refer to Appendix 13 in the Draft RMP/EIS for discussions of relevance and importance criteria for Areas of Environmental Concern. Refer to Appendix 14 for maps of the ACECs.

Overflow Wetlands ACEC

The Overflow Wetlands ACEC comprises 6,814 surface acres and 3,000 acres of federal mineral estate. The surface acreage consists of the following categories and acreages:

Public land, 2,987 acres
State land, 1,720 acres
Private land, 2,107 acres

Management Goal:

Protect the biological and scenic values of the Overflow Wetlands WHA, which provides critical habitat for T/E fish species and supports a significant riparian/wetland plant community.

Management Prescriptions:

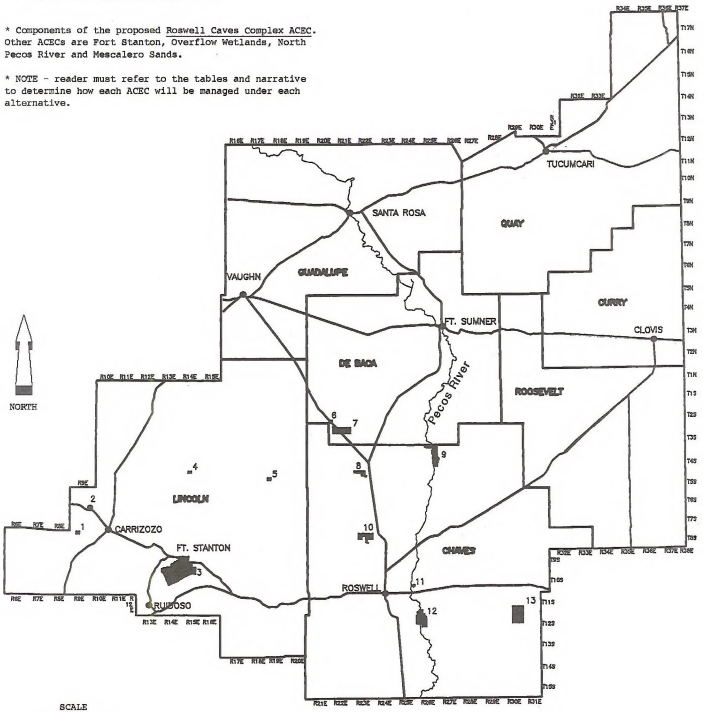
About 700 acres of wetlands, 170 acres of buffer around the wetlands, and 170 acres of

Proposed ACECs

1 - Crockett Cave*
2 - Millrace Cave*
3 - Fort Stanton
4 - Zia Christine Cave*
5 - Torgac Cave*
6 - Coachwhip Cave*
7 - Crystal Caverns/Devil's Well Caves*
8 - Martin-Antelope GYP Cave*
9 - North Pecos River
10 - Angora-Corn Cave*
11 - Bat Hole Cave*
12 - Overflow Wetlands
13 - Mescalero Sands

* Components of the proposed Roswell Caves Complex ACEC. Other ACECs are Fort Stanton, Overflow Wetlands, North Pecos River and Mescalero Sands.

* NOTE - reader must refer to the tables and narrative to determine how each ACEC will be managed under each alternative.



SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

MAP 20
PROPOSED AREAS of CRITICAL ENVIRONMENTAL CONCERN

escarpment would be protected by applying "no surface occupancy" restrictions to future oil and gas leases. The remainder of public lands in the ACEC would be open to future leasing with subject to the Surface Use and Occupancy Requirements described in Appendix 3.

About 700 acres of wetlands, 170 acres of buffer around the wetlands, and 170 acres of escarpment would be closed to the disposal of salable minerals and to the leasing of solid minerals, and would be withdrawn from entry under the land laws (including the 1872 Mining Law). These actions would reduce disturbance of the wetlands and surrounding habitat for wildlife species dependent on the area either seasonally (wintering waterfowl) or yearlong (T/E fish).

Major rights-of-way would be excluded on about 3,000 acres of public land with the Overflow Wetlands WHA to benefit wildlife species dependent on the area either seasonally (wintering waterfowl) or yearlong (T/E fish).

Legal access (easements) to the Overflow Wetlands would be acquired to resolve conflicts and enhance management in situations where existing roads that originate from county or state roads are interrupted by private or state land inholdings.

The need for acquiring easements would be evaluated on a case-by case basis as land acquisitions may eliminate the need for some easements.

About 1,700 acres of state land and 1,600 acres of private land with riparian/wetland values would be acquired if opportunities arise. Any lands acquired would be managed according to the prescriptions of this plan.

Public grazing leases or permits affecting about 3,000 acres of public land currently in Allotments 65060, 65062, and 65069 would be adjusted to improve habitat for wintering waterfowl habitat. Adjustments may include changes in stocking rate and seasons of use, such as reducing year-long grazing to grazing between March 1 and June 30. The grazing lease on Allotment 65041 would be cancelled.

Saltcedar treatments would be conducted on public land in selected riparian-wetland areas using prescribed fire, or mechanical or chemical controls, except that chemicals would not be applied aerially.

The Overflow Wetlands ACEC would be developed to showcase one of New Mexico's prime wetland areas. Developments may include nature trails with wooden walkways and observation overlooks, restroom facilities, picnic tables, trash containers, parking areas, bulletin boards, and upgrading existing access roads.

About 700 acres of wetlands, 170 acres of buffer around the wetlands, and 170 acres of escarpment would be designated closed to OHV use. The use of OHVs on about 2,100 acres would be limited to designated roads and trails.

The BLM would recommend to the New Mexico Department of Game and Fish that the wetlands be designated as a "No Minnow Seining Area" to prevent the taking of the Pecos pupfish.

Public fishing opportunities would be considered for development along the Pecos River on public lands in the areas listed below. Development may include physical access to fishing sites, parking areas, and fence crossings.

T. 12 S., R. 26 E.,
Section 5: W1/2W1/2
Section 17: W1/2NE1/4,SE1/4
Section 20: NE1/4NE1/4NE1/4

The ACEC generally would continue to be open to waterfowl hunting, but hunting may be limited to certain areas. A closure to waterfowl hunting on public lands within one-half mile of the sandhill crane roost at the Southwest Pond would be proposed to the New Mexico Department of Game and Fish, in order to protect that important crane roosting area. Other human disturbances on public lands in that zone would be closed or restricted from October through March. Other areas within the ACEC could be restricted or closed to hunting in the future. Any actions involving hunting, hunting

restrictions, or special designations, would be coordinated with the New Mexico Department of Game and Fish. Fences could be constructed around the Southwest Pond to delineate the restricted area, and on other lands that may require special management.

Riparian and aquatic habitats would be protected by acquiring water rights, entering into cooperative agreements for management of those habitats, or other methods.

As many as 300 acres of additional riparian/wetland habitat would be developed. Development may include constructing low berms and dikes, seeding or planting native riparian vegetation, and modifying existing channels. Suitability criteria for development include, but are not limited to:

- Areas with seasonal surface waters indicative of a high water table or subsurface clay layer
- Areas with the potential of supporting cottonwood tree groves
- Areas that have been or would be subject to vegetation manipulation (saltcedar control, prescribed fire, riparian pasture development)

Chemical fire retardant and heavy equipment such as bulldozers and road graders would not be used for wildfire suppression.

North Pecos River ACEC

The North Pecos River ACEC comprises 6,400 surface acres and 4,200 acres of federal mineral estate. The surface acreage consists of the following categories and acreages:

Public land, 3,360 acres
State land, 1,160 acres
Private land, 1,880 acres

Management Goal:

Protect the biological and scenic qualities of the Pecos River ACEC, which provides critical habitat for T/E fish species and supports a significant riparian plant community.

Management Prescriptions:

About 2,080 acres of federal minerals would be closed to future oil and gas leasing. About 2,120 acres of federal minerals would be open to future leasing with No Surface Occupancy.

About 4,200 acres of federal minerals would be closed to the disposal of salable minerals and the leasing of solid minerals, and be withdrawn from entry under the land laws (including the 1872 Mining Law), to eliminate surface disturbance along the Pecos River and in surrounding wildlife habitat.

Public lands in the ACEC would be designated right-of-way avoidance areas for major rights-of-way.

Legal access (easements) to the Pecos River ACEC would be acquired to resolve conflicts and enhance management in situations where existing roads that originate from county or state roads are interrupted by private or state land inholdings. The need for acquiring easements would be evaluated on a case-by-case basis as land acquisitions may eliminate the need for some easements.

About 1,160 acres of state land and 1,880 acres of private land with riparian/wetland values would be acquired if opportunities arise. Acquisition of riparian/wetland habitat would be based on the consideration of the criteria in Appendix 8.

Public grazing leases or permits affecting about 3,360 acres of public land would be adjusted to improve riparian habitat. Adjustments may include changes in seasons of use and stocking rates. Grazing practices would be modified on lands within the ACEC that are currently in Allotments 64038, 64039, 64538, and 65001.

Saltcedar control would be conducted on about 600 acres of public land in selected riparian-wetland areas, using prescribed fire, or mechanical or chemical controls, except that chemicals would not be applied aerially.

The use of OHVs would be limited to designated roads and trails on about 3,360 acres.

The BLM would recommend to the New Mexico Department of Game and Fish the designation of the wetlands as a "No Minnow Seining Area," to prevent the taking of the Pecos bluntnose shiner.

Mescalero Sands ACEC

The Mescalero Sands ACEC comprises 10,007 surface acres and 7,931 acres of federal mineral estate. The surface acreage consists of the following categories and acreages:

Public land, 7,888 acres
State land, 1,799 acres
Private land, 320 acres

Management Goal:

Protect the biological, archaeological and scenic qualities of the Mescalero Sands ACEC, with emphasis on the preservation of a portion of the shinnery oak-dune community to enhance the biodiversity of the ecosystem.

Management Prescriptions:

The entire federal mineral estate in the ACEC would be closed to future oil and gas leasing.

The entire federal mineral estate in the ACEC would be proposed for withdrawal from entry under the public land laws, including the 1872 Mining Law. The ACEC would also be closed to solid mineral leasing and the disposal of salable minerals.

Major rights-of-way would be excluded from the ACEC to protect active dunes and surrounding habitat.

Legal access to the ACEC would be acquired, as needed, to resolve conflicts and enhance management. Easement acquisitions would be evaluated on a case-by-case basis since the potential acquisition of land may eliminate the need for easements.

As many as 1,800 acres of state and 320 acres of private lands in the ACEC would be considered for acquisition if opportunities arise. Any land acquired would be managed according to the management prescriptions in this plan.

The existing 1,838-acre grazing exclusion area would be eliminated. The fence on the east side of the grazing exclusion area would no longer be maintained by the BLM because the continually shifting sands render portions of the fence ineffective at any given time, adding to high maintenance costs and difficulty in driving to and through the area. Livestock grazing preference still would not be allocated on the 1,838 acres, and on about 600 additional, adjacent acres (see Map A14-6). The legal description of the area is:

T. 12 S., R. 30 E., Sec. 1,
T. 12 S., R. 30 E., Sec. 11, east of the existing fence,
T. 12 S., R. 30 E., Sec. 12,
T. 12 S., R. 31 E., Sec. 6, W1/2,
T. 12 S., R. 31 E., Sec. 7, W1/2

No additional range improvements or vegetation treatments geared toward livestock production would be permitted in the ACEC. Maintenance and replacement of existing range developments, such as fences or pipelines, would be allowed. Projects designed for resource enhancement or protection would be considered.

The existing National Natural Landmark designation on 3,208 acres of federal, state and private land and the existing Outstanding Natural Area designation on 6,173 acres of federal land would be retained. Each of these areas is totally encompassed by the ACEC.

Approximately 2,438 acres would be designated closed to the use of OHVs. The closure conforms to the area on which grazing preference would not be established, described above. Refer to Map A14-6. In the remainder of the ACEC, OHV use would be limited to designated roads and trails.

Fort Stanton ACEC

The Fort Stanton ACEC comprises 24,630 surface acres and 27,622 acres of federal mineral estate. The state-owned hospital and prison and the Sierra Blanca Airport within the boundary of the ACEC are not included in the acreage of the ACEC.

Management Goal:

Protect the biological, archaeological and scenic qualities of Fort Stanton, while providing for quality recreation opportunity.

Management Prescriptions:

Management of the Feather Cave National Register site would emphasize off-site interpretation of its religious significance while allowing for the protection of fragile cultural values. The site would be managed in conjunction with the recreation management program, which proposes to close the cave to recreational use.

Lower Stanton Pueblo Ruin is an architectural site located very close to Feather Cave. Currently, this site is being used by Eastern New Mexico University as an archeology field school. An interpretive site at Lower Stanton Pueblo Ruin would be developed and managed in conjunction with the recreation management program to interpret Feather Cave and other cultural resources in the area. Development would occur after sufficient data recovery has been completed.

Fort Stanton Cave would be closed annually to recreation use from November 1 to the following April 15, to protect hibernating bat populations.

Feather Cave would be closed to all visitor use, except for administrative or research purposes, to protect the significant bat hibernacula and to protect visitors from extreme safety hazards associated with breakdown, vertical entrances and histoplasmosis.

Recreation developments at Fort Stanton, including trails and camping areas, would continue to be maintained or upgraded, when needed, to meet requirements for visitor health and safety.

All public lands in Fort Stanton would be open to saleable mineral disposal, except for approximately 330 acres in the Feather Cave Archeological Complex. All public lands in Fort Stanton would remain withdrawn from the general mining laws, and closed to the disposal of leasable minerals and to the leasing of oil and gas.

Major rights-of-way would be excluded on about 24,630 acres of public land to protect important plant and animal habitat, significant riparian, wetland and aquatic habitats, and visual quality.

As many as 1,320 acres of private and state lands adjacent to Fort Stanton would be acquired if opportunities arise. Any acquired lands would be managed according to the prescriptions of this plan.

A BLM administrative site would not be developed at Fort Stanton unless the BLM acquires the existing facilities previously used by New Mexico State University.

Livestock grazing would be considered to the extent it would be used as a tool to accomplish management plan objectives. Livestock grazing would be limited or excluded in riparian pastures, highly erodible areas, cave entrances, campgrounds and day-use areas, and sensitive archeological sites. Livestock grazing would be excluded from the Feather Cave Archeological Complex. No grazing preference would be established.

Saltcedar treatments would be conducted on as many as 300 acres of selected riparian/wetland habitat along the Rio Bonito and Salado Creek using prescribed fire, mechanical control (chain saws), or chemicals, except that chemicals would not be applied aerially.

Prescribed burns would be conducted in selected pinon-juniper, riparian and grassland community types at Fort Stanton to improve

wildlife habitat and reduce fuels. Fuelwood sales would be permitted in selected areas.

Two overlooks would be considered for development on the north and south sides of the historical Fort to interpret the history of the Fort's structures and area, in conjunction with the Boots and Saddles initiative.

Approximately 330 acres around the Lower Stanton Ruin and Feather Cave would be managed to preserve, protect and interpret unique archeological values, artifacts and architectural features. The area would be called the Feather Cave Archeological Complex. In addition to the management prescribed for the Fort Stanton ACEC that would also apply to the Archeological Complex, the following specific management actions would be applied, as well:

- recreation development would be considered, such as trails to Lower Stanton ruin and Indian Shelter Cave, signs, an interpretive shelter, rest rooms, and a parking area;

- off-site and on-site interpretation would be considered, including site stabilization for interpretive enhancement, exhibits, and signing and brochures.

Fort Stanton would be designated a Special Recreation Management Area with emphasis on providing quality recreational opportunities subordinate to the management of riparian and wildlife resources.

Existing recreation facilities would continue to be maintained and upgraded as needed to meet health and safety standards. The development of a campground, including location, size and types facilities, would be considered during the preparation of a comprehensive ACEC/SRMA management plan.

In addition to the 40 miles of multi-use trails already in use, about 45 miles of existing roads or trails and about 20 miles of new trails would be developed and maintained as multi-use trails for hiking, horseback riding and mountain bikes. These trails, comprising about 51 acres, would be closed to the use of OHVs.

Camping at Fort Stanton would be managed by:

- Permitting "vehicle campers" (those who drive motorized vehicles to a campsite) to drive no more than 100 feet off a BLM-designated road or trail to a campsite. But, in no case would camping be allowed within 100 feet of the Rio Bonito and Salado Creek. About 250 acres would be closed to the use of OHVs in these areas.

- Permitting back country camping throughout Fort Stanton, except within 100 feet of the Rio Bonito and Salado Creek and no closer than 300 yards of any seeps or springs, man-made water hole, water well or watering tank used by wildlife or domestic livestock.

- Limiting all camping to no closer than one-quarter mile from waysides, overlooks, interpretive trails or state highways, except at developed campgrounds and designated campsites.

Approximately 24,000 acres would be designated as limited to designated roads and trails for OHV use, to protect soils, cultural resources, and vegetation, including threatened or endangered species.

A wayside stop would be considered for development along U.S. Highway 380 to interpret the historical, archaeological, and recreational opportunities of the area.

The use of OHVs would be limited to designated roads and trails, with the following exceptions:

- A 100-foot wide corridor measured from the edge of the creek along each side of the Rio Bonito and Salado Creek would be closed to OHV use to protect sensitive riparian resources, except for the use of designated roads within the corridor.

- All multi-use trails (horse, hiking and mountain biking) would be closed to OHV use. Mountain bike trails that are located on existing roads would be open for OHV use.

- The Feather Cave Archeological Complex would be closed to OHV use, except for U.S. Highway 380 and the Fort Stanton Cave Road.

Streambank stabilization structures, native riparian plantings, riparian pastures, saltcedar control, and spring and drainage protection measures could be implemented on the Rio Bonito and Salado Creek. These practices would be used in situations including, but not limited to, areas that:

- Exhibit streambank sloughing;
- Lack riparian vegetation or regeneration;
- Exhibit invasion of exotics or undesirable plant species;
- Exhibit erosion of side drainages;
- Lack riparian pastures to control livestock use.

Riparian and aquatic habitat would be protected by maintaining minimum acceptable instream flow for Rio Bonito Creek at Fort Stanton by acquiring water rights, entering into cooperative management agreements, or other methods.

The BLM would recommend to the New Mexico State Game Commission that Fort Stanton be designated as a special hunt draw area or a restricted area open only to primitive hunting (bow and arrow or muzzle-loader). Additionally, vehicles would not be allowed off of designated roads or trails to retrieve downed game.

Big game or upland game transplants and reintroductions would be conducted on public lands when cooperatively prescribed by the BLM and the NMDGF. Transplants and reintroductions include, but are not limited to:

- Pronghorn in pastures that meet the suitability criteria (see Appendix 12);
- Mule deer in areas of low population density or areas to enhance gene pools;
- Wild turkey;
- Other big game or upland game species recommended by the New Mexico Department of Game and Fish.

Native fish and sport fish introductions or transplants would be conducted in suitable waters on public land in coordination with the New Mexico Department of Game and Fish. Proposed introductions could include rainbow, cutthroat, brown, and brook trout in Rio Bonito Creek. Criteria for introductions or transplants include, but are not limited to:

- Perennial water availability;
- Existing populations indicate suitable habitat conditions but may need supplementing due to fishing pressure;
- No or low populations in stream segments with suitable habitat conditions such as water flow, temperature, stream shading, pools and riffles, and stable streambanks.

The full wildfire suppression response level would be applied at Fort Stanton to protect Kuenzler cactus habitat and the entrance to Fort Stanton Cave. Bulldozers would not be used to construct fire line.

Roswell Cave Complex ACEC

The Roswell Cave Complex ACEC consists of nine cave systems. The nine cave systems comprising the Roswell Cave Complex are: Angora-Corn Cave; Bat Hole Cave; Coachwhip Cave; Crockett Cave; Crystal Caverns-Devils Well Caves; Martin-Antelope Gyp Cave; Millrace Cave; Torgac Cave; and Zia Christine Cave. The ACEC comprises 16,818 surface acres. There are 14,894 acres of federal mineral estate in the ACEC, including 3,000 acres under private surface. The surface acreage consists of the following categories and acreages:

Public land, 11,894 acres
Private land, 4,920 acres

Refer to Table 17 for the categories and acreages of lands comprising the ACEC, listed by cave system.

Management Goal:

Protect the natural and scenic values of caves, while allowing for limited recreational, commercial, scientific and educational use.

Management Prescriptions:

Crockett, Crystal Caverns, Martin-Antelope Gyp, Torgac Annex, and Torgac caves would be closed to visitor use annually from November 1 to April 15 to protect significant bat hibernacula. Seasons of use and visitor use restrictions would be applied to any other caves or portions of caves found to have significant bat hibernacula or nurseries.

The federal mineral estate in the ACEC, nearly 15,000 acres in size, would be closed to future leasing of oil and gas, the disposal of saleable minerals, and the leasing of solid minerals. The federal mineral estate would also be proposed for withdrawal from entry under the general land laws, including the 1872 Mining Law.

All lands in the ACEC would be designated exclusion areas for major rights-of-way.

The BLM would acquire access easements to caves for which legal access does not exist. The need for acquiring easements would be evaluated on a case-by-case basis as land acquisitions my eliminate the need for some easements. The cave systems to which access would be acquired are:

- Crockett Cave, 1.25 miles
- Crystal Caverns-Devils Well caves, 2.2 miles
- Millrace Cave, .33 mile

All public land in the ACEC would be retained. About 4,920 acres of private land would be acquired if opportunities arise to protect the caves and their hydrologic processes. Any lands acquired would be managed according to the prescriptions in this plan.

Fenced exclosures would be constructed around cave entrances in the ACEC when necessary to control access or reduce impacts to cave resources. No livestock would be allowed within any cave exclosure. Grazing would be excluded on as many as 1,000 surface acres in the ACEC following the construction of exclosures.

The ACEC would be managed to maintain the cave systems in their natural condition. Management would include actions such as graffiti and trash removal, protection against vandalism, and limiting the extent and location of trails, where appropriate.

Research and scientific use would have priority over other uses. These uses would be curtailed if there is a conflict with the protection of unique cave values.

Bat Hole Cave would be closed to all visitor use, except for administrative or research purposes, to protect the significant bat hibernacula and to protect visitors from extreme safety hazards associated with breakdown and vertical entrances. Coachwhip Cave, a typical gypsum cave, would be closed to all visitor use and managed as a control cave for future research and management programs.

Commercial cave guiding would not be allowed in caves of the ACEC until a comprehensive inventory of the biota and natural resources is accomplished. If surveys determine that these resources would not be affected by limited commercial use, then commercial use would be considered and use limits established consistent with management of the caves.

Visitation limits (human carrying capacity) and special stipulations would be prescribed in cave management plans.

Caves in the ACEC with unique or outstanding values, or threatened or endangered species, could warrant development and implementation of additional controls or gating. Documentation of use in all caves in the ACEC would be accomplished by permitting or the installation of cave registers.

About 500 acres of public lands in the ACEC would be designated closed to OHV use, not including lands already closed because they are within a wilderness study area. On the remainder of the public lands, OHV use would be limited to designated roads and trails. The OHV restrictions are displayed by cave, in Table 27.

With the exception of carbide in carbide lamps (miners' lamps), battery acid in flashlights and headlamps, and the temporary use of cave gate construction materials, no solid, liquid, or gaseous substances hazardous to human and animal life would be allowed within any cave or cave exclosure.

Wildfire suppression in the ACEC would include the protection of caves, cave resources and karst features from surface disturbance by prohibiting the use of heavy equipment to construct fire line within 400 meters of known cave entrances, passages or aspects of caves, or significant karst features, or within the exclosures around caves.

CHAPTER 3: AFFECTED ENVIRONMENT

With the exception of the items listed below, Chapter 3 (Affected Environment) of the Draft Roswell RMP/EIS and Draft Carlsbad RMPA/EIS has not been reprinted. The development of new text or tables, and modifications of existing text, tables, and maps resulted from public comments or review by BLM specialists. In some cases, the modifications dictated the reprinting of the table or map, or the printing of a large section of text. In other cases, modifications were minor and have been addressed in Table 34 and are listed, below. New text or tables are printed in this chapter and are referenced in Table 34.

Printed Tables:
- Table 88.1, CRA summary of land ownership (new)
- Table 93, RRA mining claim summary (replacement)
- Table 94, RRA estimates of surface land ownership (replacement)
- Table 101.1, locations of prairie dog towns (new)
- Table 102, areas of riparian/wetland habitat (replacement)
- Table 102.1, playa lake locations (new)
- Table 102.2, locations of springs (new)

Modified Tables. not reprinted (See Table 34):
- Table 96, RRA estimated ecological condition
- Table 101, RRA water sources

Text changes printed in this section:
- Discussion of the Waste Isolation Pilot Plant, Carlsbad Resource Area (new)
- Discussion of wildlife habitat conditions, Roswell Resource Area (new)
- Discussion of socioeconomics, both resource areas (revision)
- Discussion of animal damage control activities, Roswell Resource Area (new)

TABLE 88.1
ESTIMATES OF SURFACE LAND OWNERSHIP, IN ACRES, BY COUNTY
CARLSBAD RESOURCE AREA

COUNTY	BLM ADMIN. LANDS	STATE	PRIVATE	OTHER FEDERAL LANDS	TOTAL ACRES IN COUNTY	TOTAL ACRES IN R.A.
Chaves[1/]	381,000	209,000	258,000	101,000	949,000	
Eddy	1,413,000	538,000	506,000	226,000	2,683,000	
Lea	403,000	1,253,000	1,093,000		2,749,000	
Total	2,197,000	2,000,000	1,857,000	327,000		6,381,000

Note: Figures rounded to nearest 1,000 acres.

[1/] For Chaves County, acreage is for that portion of the county in the Carlsbad Resource Area.

Source: BLM Geographic Information System, 1993.

TABLE 93
MINING CLAIM SUMMARY BY COUNTY, TYPE AND STATUS
ROSWELL RESOURCE AREA

	Claim Type							
	Lode		Placer		Mill Site		Tunnel Site	
	Active	Closed	Active	Closed	Active	Closed	Active	Closed
Chaves	134	456	6	1,105	0	0	0	0
De Baca	9	39	6	0	0	0	0	0
Guadalupe	46	2	0	0	0	0	0	0
Lincoln	3,107	3,593	345	646	13	17	0	2
Curry	0	0	0	0	0	0	0	0
Quay	0	0	0	0	0	0	0	0
Roosevelt	0	0	0	0	0	0	0	0
Totals	3,296	4,090	357	1,751	13	17	0	2

Source: Roswell District, Mining Claim Summary, 12/17/93

TABLE 94
ESTIMATES OF SURFACE LAND OWNERSHIP, IN ACRES, BY COUNTY
ROSWELL RESOURCE AREA

COUNTY	BLM ADMIN. LANDS	STATE	PRIVATE	OTHER FEDERAL LANDS	TOTAL ACRES IN COUNTY	TOTAL ACRES IN R.A.
Chaves[1/]	872,000	794,000	1,520,000	39,000	3,225,000	
Curry	2,000	111,000	770,000		883,000	
DeBaca	43,000	401,000	1,031,000	4,000	1,479,000	
Guadalupe	50,000	311,000	1,588,000	1,000	1,950,000	
Lincoln	516,000	688,000	1,299,000	580,000	3,083,000	
Quay	2,000	263,000	1,521,000	1,000	1,787,000	
Roosevelt	5,000	216,000	1,329,000	8,000	1,558,000	
Total	1,490,000	2,784,000	9,058,000	633,000		13,965,000

Note: Figures rounded to nearest 1,000 acres.

[1/] For Chaves County, acreage is for that portion of the county in the Roswell Resource Area.

Source: BLM Geographic Information System, 1993.

TABLE 101.1
LOCATIONS OF PRAIRIE DOG TOWNS
ROSWELL RESOURCE AREA

Location	Approximate Acres Within Town Boundary			
	Federal Surface	Private or State Surface	Federal Minerals	Total Surface
T. 4 S., R. 22 E., Sec. 13	0	80	28	80
T. 4 S., R. 23 E., Sec. 18	23	0	23	23
T. 7 S., R. 26 E., Sec. 13, 14, 23, 24	6	23	0	29
T. 8 S., R. 8 E., Sec. 15, 22, 27	720	0	720	720
T. 8 S., R. 31 E., Sec. 29	29	0	29	29
T. 9 S., R. 24 E., Sec. 22, 23	98	22	98	120
T. 9 S., R. 30 E., Sec. 14, 22, 23	124	6	130	130
T. 9 S.. R. 26 E., Sec. 31	11	0	11	11
T. 10 S., R. 25 E., Sec. 1	0	2	0	2
T. 10 S., R. 26 E., Sec. 6	84	0	84	84
T. 10 S., R. 25 E., Sec. 6, 7	149	40	149	189
T. 20 S., R. 32 E., Sec. 21	5	0	5	5
Totals	1,249	173	1,277	1,422

Note: Each grouping of legal descriptions between horizontal lines represents a prairie dog town.
Source: BLM files, 1996.

TABLE 102
AREAS OF RIPARIAN/WETLAND HABITAT
ROSWELL RESOURCE AREA

Name	Habitat on Public Land (miles/acres)	Condition
Rio Bonito (at Fort Stanton)	4.7 mi./115 ac.	Proper Functioning Condition
Rio Bonito Exchange Lands (Tract 4)	1.0 mi./10 ac.	Proper Functioning Condition
	1.0 mi./10 ac.	Functional-At Risk (Upward Trend)
Rio Bonito Exchange Lands (Tracts 1, 2 & 3)	not inventoried	Unknown
Salado Creek (Inside Exclosure)	0.6 mi./60 ac.	Proper Functioning Condition
	0.6 mi./60 ac.	Functional-At Risk (Upward Trend)
Salado Creek (Outside Exclosure)	1.2 mi./60 ac.	Proper Functioning Condition
	1.2 mi./60 ac.	Functional-At Risk (Upward Trend)
Salado Wetland	300 ac.	Proper Functioning Condition
Pecos River	1.9 mi./138 ac.	Functional-At Risk (Upward Trend)
	1.9 mi./138 ac.	Functional-At Risk (Trend Not Apparent)
	15.2 mi./1,100 ac.	Nonfunctional
Overflow Wetlands	940 ac.	Proper Functioning Condition
	60 ac.	Functional-At Risk (Upward Trend)
West Spur Spring	1.5 ac.	Proper Functioning Condition
	0.5 ac.	Functional-At Risk (Upward Trend)
Escondida Spring	0.5 ac.	Proper Functioning Condition
	0.5 ac.	Functional-At Risk (Trend Not Apparent)
Garnsey Spring	0.5 ac.	Proper Functioning Condition
	0.5 ac.	Functional-At Risk (Trend Not Apparent)
McCrea Spring	1.0 ac.	Functional-At Risk (Trend Not Apparent)
Goat Spring	1.0 ac.	Proper Functioning Condition
Black Rock Spring	1.0 ac.	Functional-At Risk (Upward Trend)
Bull Gap Spring	1.0 ac.	Functional-At Risk (Downward Trend)

Name	Habitat on Public Land (miles/acres)	Condition
Bosque Spring	0.5 ac.	Functional-At Risk (Trend Not Apparent)
	0.5 ac.	Nonfunctional
Lloyds Spring	3.2 ac.	Proper Functioning Condition
	0.8 ac.	Functional-At Risk (Upward Trend)
Stephenson Spring	0.5 ac.	Nonfunctional
Feather Spring	1.0 ac.	Proper Functioning Condition
Government Spring	0.5 ac.	Proper Functioning Condition
9 Other Springs	9 ac.	Unknown
16 Playas	160 ac.	Proper Functioning Condition
	96 ac.	Functional-At Risk (Trend Not Apparent)
	64 ac.	Unknown
44 Other Playas and Alkali Lakes	880 ac.	Unknown

Note: Refer to the Glossary for definitions of condition terminology.

Source: BLM files, 1995.

TABLE 102.1
PLAYA LAKE LOCATIONS
ROSWELL RESOURCE AREA

Location	Name	Ownership
T. 2 S., R 31 E., Sec. 20, SW1/4		PS/FM
T. 3 S., R 36 E.,		
Sec. 4, S1/2	Little Salt Lake	PS/FM
Sec. 5, SE1/4	Little Salt Lake	PS/FM
Sec. 8, NE1/4	Little Salt Lake	PS/FM
Sec. 9, NW1/4	Little Salt Lake	PS/FM
T. 5 S., R. 17 E., Sec. 23, NE1/4		FS/FM
T. 5 S., R. 18 E., Sec. 22, N1/2		FS/FM
T. 5 S., R. 31 E., Sec. 24, E1/2		PS/FM
T. 6 S., R. 20 E.,		
Sec. 27, SW1/4	North Lake	FS/FM
Sec. 28, SE1/4	North Lake	FS/FM
T. 6 S., R. 23 E., Sec. 22, NE1/4		FS/FM
T. 6 S., R. 31 E., Sec. 1, Lot 1		PS/FM
T. 7 S., R. 18 E., Sec. 23, SE1/4		PS/FM
T. 7 S., R. 21 E.,		
Sec. 4, NW1/4	Joe's Tank	FS/FM
Sec. 10, SW1/4		FS/FM
Sec. 13, E1/2		FS/FM
Sec. 14, NW1/4	BLM Lake	FS/FM
T. 7 S., R. 22 E., Sec. 18, NW1/4	South Lake	PS/FM
T. 7 S., R. 25 E.,		
Sec. 27, W1/2	Cocklebur Lakes	FS/FM
Sec. 28, S1/2	Cocklebur Lakes	FS/FM
Sec. 33, SE1/4	Cocklebur Lakes	FS/FM
T. 7 S., R. 28 E., Sec. 7, NE1/4	Samples Lake	PS/FM
T. 7 S., R. 30 E., Sec. 18, W1/2	Salt Lake	FS/FM
T. 8 S., R. 19 E., Sec. 4, NE1/4		PS/FM
T. 8 S., R. 24 E., Sec. 13, NE1/4		FS/FM
T. 8 S., R. 30 E.,		
Sec. 5, E1/2	Curlew Lake	PS/FM
Sec. 8, NE1/4	Curlew Lake	PS/FM
T. 8 S., R. 30 E., Sec. 19, SW1/4	Broke Tank Lake	PS/FM
T. 9 S., R. 18 E., Sec. 1, E1/2		PS/FM
T. 9 S., R. 19 E., Sec. 3, NW1/4		PS/FM
T. 9 S., R. 20 E., Sec. 11, NW1/4	Antelope Lake	FS/FM
T. 9 S., R. 21 E., Sec. 29, SE1/4	Christine Lake	PS/FM

Location	Name	Ownership
T. 9 S., R. 30 E., Sec. 18, NE1/4	Presler Lake	FS/FM
T. 10 S., R. 22 E.,		
Sec. 6, SE1/4	Mare Lake	FS/FM
Sec. 18, NE1/4		PS/FM
T. 12 S., R. 23 E., Sec. 30, NE1/4		FS/FM
T. 12 S., R. 24 E., Sec. 33, SE1/4		PS/FM
T. 12 S., R. 27 E.,		
Sec. 8, W1/2		PS/FM
Sec. 25, NE1/4	East Lake	FS/FM
T. 13 S., R. 17 E., Sec. 30, E1/2		PS/FM
T. 13 S., R. 22 E., Sec. 12, NW1/4		PS/FM
T. 13 S., R. 23 E., Sec. 10, NE1/4		PS/FM
T. 13 S., R. 24 E.,		
Sec. 2, S1/2	Peter's Lake	PS/FM
Sec. 11, N1/2	Peter's Lake	FS/FM
T. 13 S., R. 26 E., Sec. 1, SW1/4		FS/FM
T. 14 S., R. 23 E.,		
Sec. 28, SW1/4		PS/FM
Sec. 31, NE1/4		PS/FM
T. 14 S., R. 24 E., Sec. 27, W1/2	Scott's Lake	PS/FM
T. 14 S., R. 25 E., Sec. 35, NE1/4		FS/FM
T. 14 S., R. 27 E., Sec. 33, SE1/4		FS/FM
T. 15 S., R. 28 E., Sec. 34, SW1/4	Ishee Lake	FS/FM
T. 16 S., R. 28 E., Sec. 1, SW1/4	Nakee Ishee Lake	FS/FM
T. 16 S., R. 28 E., Sec. 15, N1/2	Cave Lake	FS/FM

Notes:

1. FS = Federal Surface; FM = Federal Mineral Estate; PS = Private Surface.

2. Legal descriptions are for the general location of features, not the exact locations of features.

3. The symbols in the 'ownership' column show general ownership associated with a feature. The symbols do not imply complete ownership.

Source: BLM files, 1996.

TABLE 102.2
LOCATIONS OF SPRINGS ON BLM-ADMINISTERED PUBLIC LANDS
ROSWELL RESOURCE AREA

Location	Name
T. 5 S., R. 25 E., Sec. 22, NESW1/4	Red Spring
T. 5 S., R. 25 E., Sec. 33, NESW1/4	(Alkali)
T. 6 S., R. 26 E., Sec. 25, SENE1/4	(Bosque Seep)
T. 6 S., R. 26 E., Sec. 26, NENW1/4	(Bosque Seep)
T. 6 S., R. 27 E., Sec. 30, SENE1/4	(Haystack)
T. 6 S., R. 27 E., Sec. 30, NWSW1/4	Bosque Spring
T. 8 S., R. 25 E., Sec. 25, SENE1/4	(Crosby)
T. 9 S., R. 8 E., Sec. 23, SESE1/4	Bull Gap Spring
T. 9 S., R. 9 E., Sec. 34, SWNE1/4	Phillips Spring
T. 9 S., R. 14 E., Sec. 28, NENE1/4	(Black Rock)
T. 9 S., R. 14 E., Sec. 29, NESW1/4	West Spur Spring
T. 9 S., R. 15 E., Sec. 15, SWSW1/4	Government Spring
T. 9 S., R. 15 E., Sec. 16, SWSE1/4	Feather Spring
T. 9 S., R. 15 E., Sec. 35, NESE1/4	Goat Spring
T. 9 S., R. 25 E., Sec. 1, SESE1/4	Lloyds Spring
T. 9 S., R. 25 E., Sec. 24, SWSE1/4	(McCrea)
T. 10 S., R. 8 E., Sec. 12, NENE1/4	Stephenson Seep
T. 10 S., R. 25 E., Sec. 13, NESE1/4	McCrea Spring
T. 10 S., R. 25 E., Sec. 24, NENW1/4	(McCrea)
T. 11 S., R. 26 E., Sec. 14, NWSE1/4	Escondida Spring
T. 11 S., R. 26 E., Sec. 35, SWSW1/4	Garnsey Spring

Note: Names in parenthesis are unofficial and are used simply for identification. Duplicative names represent features in the same drainage.

Source: BLM files, 1996.

Insert the following text in the Draft RMP/RMPA/EIS, on page 3-8, column 2, following paragraph 4:

Waste Isolation Pilot Plant.

In October of 1992, the WIPP Land Withdrawal Act (LWA), Public Law 109-579, withdrew 10,240 acres of land from the BLM and transferred custodianship to the Department of Energy (DOE). The region is located 26 miles east of Carlsbad within T. 22 S., R. 31 E., in an area known as Los Medaños. This federal project is known as the Waste Isolation Pilot Plant (WIPP), and the area and its subsurface are intended for use as a research and development facility. The WIPP is to demonstrate the safe disposal of mixed hazardous and radioactive wastes resulting from defense activities and programs of the United States. Disposal of the mixed wastes will be in a geologic repository 2,150 feet beneath the surface, within a salt formation.

Section 4 of the WIPP LWA requires a land management plan for the withdrawal area. The WIPP Land Management Plan (DOE/WIPP LMP 93-004) has been written in cooperation with the BLM and the State of New Mexico. The WIPP Land Management Implementation Plan (DOE/WIPP 94-026) provides for multi-agency involvement in the administration of WIPP land management actions and formalizes standard land management practices within the WIPP withdrawal area. Commitments contained in current permits, agreements, or concurrent Memoranda of Understanding with other agencies (e.g., State of New Mexico and Department of the Interior) are adhered to when addressing and evaluating land use management activities and future amendments that affect the management of WIPP lands.

Wildlife Habitat Condition, Roswell Resource Area.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-63, column 1, before paragraph 1:

Elk

A growing elk population of an estimated 20 to 30 animals inhabits the Fort Stanton area and uses most habitat types. Primary habitats use by the elk are the piñon-juniper hills and the riparian area along the Rio Bonito. Elk move between Fort Stanton and National Forest lands to the south and west. Habitat conditions are good to excellent due to stringent livestock grazing management, improvement of riparian habitat, distribution of wildlife and livestock waters, and the diversity of habitat and vegetation. Habitat disturbance and harassment may occur as the area becomes more popular for outdoor recreation.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-63, column 2, following the partial paragraph at the top of the column:

[Mule Deer]
Habitat condition is good in the Carrizozo Malpais mule deer management area due to the availability of various browse species and the broken terrain affording cover. Water is a limiting factor within the lava flow. Since this area is also a wilderness study area (WSA), permanent water developments in the lava flow have not been constructed, because their construction would conflict with the management policy of the WSA. Available water occurs in small pools after heavy precipitation and in livestock waters along the edge of the lava flow. Mule deer become susceptible to predation when leaving the lava flow to seek water. The construction of water sources compatible with wilderness management objectives would improve habitat conditions.

Mule deer habitat in the Fort Stanton area is in good condition due to stringent livestock grazing management, improvement of riparian habitat, distribution of waters, and diversity of habitat. Habitat conditions can be improved by using prescribed fire to set-back seral stage in the piñon-juniper vegetation type. Many browse species are being crowded out by juniper encroachment and may need to be rejuvenated

with fire. Selective clearing of juniper by fire or fuelwood cutting would further improve habitat conditions. Again, habitat disturbance and harassment may occur as the area becomes more popular for outdoor recreation. Big game hunts must be managed to reduce the heavy hunting pressure at Fort Stanton and reduce habitat disturbance.

Mule deer habitat in the Cedar Hills area is in fair condition. Livestock use in the area is a combination of sheep, goats, cattle and horses. In addition, public access is very good to the area and hunting pressure is heavy. Habitat conditions can be improved by modifying grazing schemes and using prescribed fire to benefit browse species.

Habitat conditions in the Southwest Roswell management area varies by grazing allotment due to the kind and class of livestock (sheep and cattle) being grazed. This is a very large area composed of rugged limestone hills and drainages in combination with diverse landownership patterns that add difficulty to habitat management. In general, habitat conditions are good but are static. Higher mule deer concentrations on private lands along the Hondo River are mostly attributable to agriculture and water. Improvement of browse species availability, wildlife water sources, and overall plant community condition would enhance habitat conditions to support healthy mule deer populations.

Habitat conditions in the Pecos River mule deer management area are generally fair to good. Mule deer are scattered throughout the Pecos Valley and associated uplands, preferring areas with adequate water sources, cover, and browse species. Much of the river riparian areas have been invaded by dense stands of salt cedar. These stands provide cover, but little else. Habitat improvement by using prescribed fire and developing riparian pastures would enhance habitat for mule deer and various other wildlife species. Currently, the density of oil and gas development and associated public access routes along the narrow corridor of the river is low, but are expected to increase.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-65, column 1, at the end of paragraph 1:

[Pronghorn]
In general, habitat conditions for pronghorn are fair. Since drought conditions are common in southeastern New Mexico, habitat conditions for pronghorn can drastically change within a few years, or as rapidly as a few months. During below-average rainfall years, habitat conditions become less than favorable because drought affects the availability of forb species. Habitat condition also is affected by the continued use of the same lands for livestock grazing, particularly by sheep. However, during extreme periods of drought, livestock numbers are usually voluntarily reduced. Netwire fences continue to inhibit the movement of pronghorn across the range to seek better foraging areas. Outbreaks of stomach worm infestation can occur during wet springs that favor habitat conditions for nematodes. This is particularly a problem on sheep grazing allotments. Conversion from sheep to cattle operations would benefit pronghorn habitat by reducing competition for forbs and allowing the replacement of pasture netwire fences with barbed wire fences.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-65, column 1, following paragraph 4:

[Upland Game Birds]
Mourning dove and scaled quail are the most abundant upland game birds in the resource area. In general, habitat conditions for upland game birds vary with precipitation. During periods of drought-like conditions, game bird populations generally decline. Local population numbers benefit by the maintenance of yearlong water developments on public lands. Habitat improvement is primarily accomplished with vegetation manipulation, such as brush control and prescribed fire.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-65, column 2, following paragraph 1:

[Raptors]
Habitat conditions for raptors in the resource area are good overall, considering that habitat conditions vary with precipitation. Precipitation directly impacts vegetation and indirectly affects prey base populations. There are no significant raptor nesting areas in the resource area that compare with the Los Medaños area east of Carlsbad. There are, however, several areas that provide an assemblage of special habitat features attractive to raptors. The main areas of raptor concentrations are along the Pecos River, at Fort Stanton, along the Caprock, and at the Carrizozo Lava Flow. Numerous natural and manmade habitat features, such as sinks, rock cliffs, oil and gas facilities, and mineral material pits, are used by raptors for perching or nesting sites.

An important wintering area for bald and golden eagles is the Macho Wildlife Habitat Area. Habitat conditions within the key area are fair to good, resulting from livestock grazing pressure that affects vegetation resources for prey species. Development restrictions on various projects that potentially affect raptors, buffer zones around nesting sites, and riparian area management, are the primary management tools to protect and enhance habitat. Habitat improvement is primarily accomplished by vegetation manipulation, such as brush control and prescribed fire.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-65, column 2, following paragraph 3:

[Shorebirds and Waterfowl]
The primary wetland area on public lands in the resource area is the Overflow Wetlands Wildlife Habitat Area. Wetland habitat conditions there are good to excellent because the area is protected. The major disturbance to habitat occurs during the hunting season. A major sandhill crane roost is located in the wetlands, partially on private land. Disturbance of this roost forces the birds to leave the area.

There are many playas and alkali lakes in the resource area that provide seasonal habitat for waterfowl. These features could be enhanced for waterfowl and other wildlife species by protection from habitat disturbance. There are numerous earthen tanks maintained by ranch operators throughout the resource area that provide waterfowl habitat, but their usefulness depends on rainfall and the amount of use by livestock.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-66, column 1, partial paragraph, line 17, at the end of the sentence.

[Lesser Prairie Chicken]
Another major limiting factor is the availability of nesting habitat. Davis (1979) in his research in southeastern New Mexico found three vegetation subtypes characterized by the relative quantity of sand bluestem. Vegetation Subtype I was shown to be the optimum habitat for prairie chickens; nest selection was greatest in this subtype. The basal composition of sand bluestem is at least 27 percent in Subtype I and included at least 29 percent shinnery oak. Drought and livestock grazing have a direct affect on the availability of nesting habitat.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-66, column 1, following partial paragraph:

[Lesser Prairie Chicken]
Overall, habitat conditions at Mescalero Sands are good, due partly to the treatment of shinnery oak to increase grass composition, the protection of prairie chickens from oil and gas exploration and development by the use of timing stipulations during a portion of the breeding season, and the lack of agricultural development. But, specific habitat conditions range from poor to excellent when viewed on an allotment-by-allotment basis. Grazing management varies by operator and is limited on those allotments composed of a single or a few small pastures.

Grazing management flexibility to maintain or improve habitat conditions for prairie chickens depends on the availability of other pastures for rotation. Modification of grazing systems (season of use, duration, intensity) is needed to maintain or improve the composition and standing height of sand bluestem for nesting. Recent drought conditions (1990-1996) have contributed to decreased bird populations in Mescalero Sands. Because of regional habitat and population declines, the lesser prairie chicken has been proposed for listing under the Endangered Species Act.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-66, column 1, following paragraph 1:

[Sand Dune Lizard]
From what is currently known, the sand dune lizard (*Sceloporus arenicolous*) requires the nearly homogenous stands of shinnery oak that cover the partially stabilized dunes in the Mescalero Sands region of Chaves, Eddy, Lea, and possibly, Roosevelt counties. Potential habitat in the Roswell District is estimated to be 776,000 acres, based on SCS range site descriptions, which include sand hills and deep sand sites with shinnery oak. Active or semi-active sand dunes with "blowouts" must be present for the species to occur within an area. Recent distribution studies have established the general distribution pattern of sites supporting the lizard. The distribution pattern follows the shinnery oak/dune habitat type beginning west of Kenna, trending southerly through the Loco Hills area, and then southeasterly to Eunice, where the southern-most extent of the lizard seems to end. Additionally, two east-trending patterns extend from the general north-south distribution. One pattern extends to an area north of Milnesand and the other to an area south of Crossroads.

Disturbance of these dunes would present a significant deterrent to the continued existence of the lizard in those areas. These lizards exhibit strong site fidelity and are not thought to move between dunes complexes. Because of the unique and limited habitat of the lizard, actions that result in direct loss, modification, or fragmentation of its habitat will likely jeopardize the future of this species (NMDGF 1994).

Research indicates that shinnery oak control has contributed to the decline of local sand dune lizard populations in treated pastures. A majority of shinnery oak control projects included leave-out areas considered to be suitable habitat for the lizard. Shinnery oak control has not been conducted in the resource area since 1992. Mescalero Sands continues to provide the only habitat in New Mexico for this species. Overall, habitat conditions are good due to the low number of developments or facilities throughout the sand country. Specific dune habitats that are occupied are still vulnerable to disturbance by oil and gas exploration and development.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-66, column 1, following paragraph 1:

Prairie Dogs

The prairie dog ecosystem is an assemblage of species and ecological processes associated with prairie dog towns. Several special status species are associated with prairie dog towns and represent species that are totally dependent on prairie dogs or benefit from their relationship with prairie dogs. Maintenance of the biological diversity in grassland ecosystems requires the protection of the few prairie dog towns in the resource area. Past eradication programs have reduced prairie dog populations in the resource area, although disease also has contributed to the decline in the population. About nine known prairie dog town sites remain in the resource area, located either wholly or partially on public lands. The towns encompass about 1,400 acres of land. Refer to Table 101.1.

Insert the following text in the Draft RMP/RMPA/EIS on page 3-66, column 1, following paragraph 2:

[Fish]
The only cold-water fishery in the resource area is the Rio Bonito at Fort Stanton and the acquired lands below Fort Stanton. Riparian habitat conditions are good to excellent at Fort Stanton and are improving on the acquired lands. Instream flows are controlled at Bonito Lake, about nine miles upstream from Fort Stanton.

The Pecos River is the major warm water fishery in the resource area. The BLM has no authority for maintenance of water levels in the Pecos River or its tributaries. Stream desiccation frequently occurs. The aquatic habitat generally is in poor condition because of the lack of minimum instream flows. The Overflow Wetlands is in excellent condition for aquatic species due to habitat protection and the perennial source of water from Lea Lake.

Socioeconomics

Insert the following text and tables in the Draft RMP/RMPA/EIS beginning on page 3-1, column 1, following paragraph 1. This text replaces the discussion of economic and social factors on pages 3-1 through 3-6 of the Draft RMP/RMPA/EIS. The tables in this section are numbered with the prefix "3-" to differentiate them from tables published in the Draft RMP/RMPA/EIS.

In this chapter, oil and gas resources and socio-economic factors are discussed in the context of the Roswell District. Because the oil and gas resources of both the Carlsbad and Roswell resource areas are similar, separate discussions would be redundant. Socio-economic factors are generally discussed in the District context to permit assessment within the southeast New Mexico regional economy. Socio-economic factors specific to the Roswell Resource Area are discussed in a separate section.

OIL AND GAS RESOURCES (ROSWELL DISTRICT)

The Roswell District is comprised of nine southeast New Mexico counties: Chaves, Curry, De Baca, Eddy, Guadalupe, Lea, Lincoln, Quay, and Roosevelt. The oil and gas industry is well established in the district, with producing oil and gas fields, support services, refineries, and gas compressor stations. Production is primarily located in the Permian Basin, which extends in the subsurface into Texas. All phases of the oil and gas exploration and development process have occurred in the planning area including geophysical exploration, exploratory drilling, field development and production, and oil refining.

The United States is presently importing over 9.4 million barrels of oil per day (*Oil & Gas Journal*, January 1, 1996), or about 58 percent of its crude oil needs. Criticism over the failure of the U.S. to develop its domestic crude oil and natural gas reserves is being heard more and more frequently. Indications are that the future demand for oil and gas resources in the Roswell District will also increase. Reported crude oil and natural gas reserves in New Mexico as of December 31, 1993 were 707 million barrels of oil and 3,304 billion cubic feet of gas. (Source: State of New Mexico, Annual Resources Report, 1994. Energy, Minerals and Natural Resources Department.) The capability of the resource to meet future demand depends upon the presence of undiscovered oil and gas resources, the life expectancy of existing productive areas, and the economic situation, with economics being the bottom line that drives oil and gas activities in the "oil patch." As known productive areas are depleted over time and abandoned, undiscovered resources must meet the continued demand.

Recent economic conditions in the oil industry resulted in a sharp decline in the number of active exploratory wells and the number of development wells drilled. After reaching a low of 669 wells drilled in 1989, the number of wells drilled in southeast New Mexico annually has averaged 828 wells per year from 1990 to 1993. Over sixty percent of the wells completed in the state each year are drilled in this area (Table 3-1). An economic turnaround in the oil industry or an increase in the price of oil purchased from abroad would spur an increase in oil and gas activity in the planning area. Continued low oil prices and depressed economic conditions would result in an increase in the number of abandonments and a decrease in domestic exploration and development.

Most of the district has high or moderate potential for the occurrence of oil and gas. The high potential areas are those areas now producing oil and gas or which have high industry interest. Moderate potential areas are those areas which have had oil and gas shows in favorable geologic environments (geology similar to high potential areas). Low potential areas are those areas where the geologic environment is unfavorable or where little or no information is available. Map 25 in the Draft RMP/RMPA/EIS depicts the hydrocarbon potential categories for the Roswell District. The data on which this map is based includes USGS-defined oil and gas plays, published geologic reports and a review of the BLM's individual well records.

TABLE 3-1
WELL COMPLETIONS IN NEW MEXICO
1984-1993[1/]

Year	Total number of wells completed	SE New Mexico wells completed	Percent of total
1984	1794	1154	64.3
1985	2047	1237	60.4
1986	1243	838	67.4
1987	938	734	78.3
1988	1093	788	72.1
1989	1097	669	61.0
1990	1560	835	53.5
1991	1624	889	54.7
1992	1116	740	66.3
1993	1289	848	65.8
AVG.	1380	873	63.3

1/ Wells completed include oil, gas, and plugged and abandoned.

Source: State of New Mexico, Annual Resources Report, 1994. Energy, Minerals and Natural Resources Department.

Table 1 in the Summary at the beginning of this document shows the BLM-managed mineral estate acreage. For a description of oil and gas exploration and drilling operations, see Appendix 15 in the Draft RMP/RMPA/EIS.

The Roswell District has an estimated area of 20.35 million acres including nearly 13.965 million acres of federal mineral estate. As of March 1995, there were 6,365 Federal leases in effect encompassing approximately 3.2 million acres in the District. Of these, approximately 1.2 million acres were held by production. One-hundred-twenty leases, encompassing about 45,633 acres, were held in suspension for various reasons.

Most of the oil and gas production in the Roswell District occurs in Lea, Eddy, Chaves, and Roosevelt counties. There are an estimated 729 active oil pools and 486 active gas pools in the Roswell District. The total number of active and abandoned oil and gas pools is estimated at 1,975 and the total number of wells drilled is estimated at 43,500. Table 3-2 shows the numbers of wells drilled in the Roswell District, 1904-1991. The total number of active wells, including injection wells, on federal, state, and private lands in the Roswell District has been estimated at 32,813 as of December 1994.

TABLE 3-2
(TABLE 88, Draft RMP/RMPA/EIS)
FEDERAL, STATE AND FEE WELLS DRILLED
IN THE ROSWELL DISTRICT, 1904-1991

County	Number of wells	Percent
Chaves	5,150	12
Eddy	12,656	29
Lea	23,046	54
Roosevelt	1,538	4
All other counties	421	1
Carlsbad RA	35,702	83
Roswell RA	7,109	17
Roswell District	42,811	100

Source: BLM files, 1994.

As of January, 1991, there were approximately 27,000 total active, unreclaimed well sites in the district. Each of these sites has an estimated five acres of surface disturbance, including access roads.

In fiscal year 1995, a total of 625 Applications for Permit to Drill (APD) federal and non-federal wells were submitted for lands in the Roswell District. Approximately 390 exploratory and development wells were drilled during the same period on federal lands.

Average New Mexico drilling costs per well in 1991 for oil wells was $413,203; for gas wells, $319,964; and for dry holes, $298,555. The average depth per well was 4,016 feet. (New Mexico Oil and Gas Facts '92, New Mexico Oil & Gas Association.)

In 1994, average oil production in the District was five barrels of oil per day per well. This low level of production is possible because many reservoirs in this region are relatively shallow and production costs are less than those for deeper wells. In addition, most oil is produced by independent operators who have lower overhead and operating costs than major oil companies. Thus, the independents are able to produce these wells at a lower production rate and smaller profit margin.

Oil and gas production in 1994 from the Roswell District has been estimated at 59.3 million barrels of oil and 481 billion cubic feet of gas. Table 3-3 lists southeast New Mexico oil and gas production by county for 1994.

Oil production and new well development should continue in presently producing formations in southeastern New Mexico fields. While oil production is declining in currently producing fields, new production is continually being discovered not only in these existing fields but also in newly discovered fields. New technologies also add to increases in resource recovery from existing and new producing horizons. As the average daily production declines to a level where it is no longer possible to produce oil and gas at a profit, the number of wells plugged is expected to increase. Over the next 20 years, the BLM can expect approximately 1,824 wells to be plugged and abandoned. In addition to plugging, some previously plugged wells are likely to be re-entered and recompleted, or deepened to zones not previously considered, with expectations of encountering hydrocarbons in deeper sedimentary horizons. Little exploration of these older horizons has occurred to date, but hydrocarbons in older, deeper, sediments have also been discovered and produced.

The extent to which the recompletions or deeper zones will add to new production in this area is unknown. Southeast New Mexico crude oil and condensate production for 1993 is shown in Table 3-4

TABLE 3-3
SOUTHEAST NEW MEXICO
OIL AND GAS PRODUCTION, 1994

County	Oil production, BBL	Gas production, MCF
Chaves	1,173,104	26,414,478
Eddy	17,892,609	207,511,698
Lea	39,696,607	244,186,003
Roosevelt	596,869	3,176,401
TOTAL	59,359,189	481,288,580

Source: Annual report of the New Mexico Oil & Gas Engineering Committee, Inc., 1994.

TABLE 3-4
SOUTHEAST NEW MEXICO CRUDE OIL AND CONDENSTATE PRODUCTION, 1993

County	Rank in state	Oil & condensate, barrels	Percent of total state production
Lea	1	41,442,970	59.6
Eddy	2	21,339,114	30.7
Chaves	5	1,333,024	1.9
Roosevelt	6	576,169	0.8
SE New Mexico total oil, BBL		64,691,277	93.0
State total oil production, BBL		69,519,650	100.0

Source: State of New Mexico, Annual Resources Report, 1994. Energy, Minerals and Natural Resources Department.

In the last two decades, the number of gas wells drilled in the Roswell District has increased until they are almost as numerous as oil wells. In any given year, nearly half of the new producing wells drilled in the state are gas wells. The average wellhead price for natural gas followed the price increases of the early 1980s following the Iranian oil embargo of 1979 and the Natural Gas Policy Act of 1978. But, increased oil production by OPEC and the general slowdown of the U.S. market lowered the demand and price for natural gas. The actual production of natural gas in the Roswell District is slightly more than half the potential capacity of known reserves. Dry and casinghead gas production for the southeastern New Mexico counties in 1993 is shown in Table 3-5.

TABLE 3-5
SOUTHEAST NEW MEXICO
DRY & CASINGHEAD GAS PRODUCTION, 1993

County	Rank in state	Gas, MCF	Percent of total state production
Lea	3	252,328,719	17.7
Eddy	4	222,858,805	15.6
Chaves	5	36,656,666	2.6
Roosevelt	6	2,671,202	0.2
SE New Mexico total gas, MCF		514,515,392	36.1
State total gas production, MCF		1,423,834,403	100.0

Source: State of New Mexico, Annual Resources Report, 1994. Energy, Minerals and Natural Resources Department.

The gas industry in southeastern New Mexico is mature, with existing recovery and separation facilities, and pipelines for transportation in place and potential markets identified. For the near future, the outlook for natural gas is more optimistic than for oil. There is a capability for increased production when market demand increases.

In the future, it can be expected that the prices for oil and gas will rise, but when and by how much cannot be predicted with any certainty due to the influence of overseas markets. Some incentives have been provided to industry to drill new wells, work-over existing ones, and to initiate additional secondary or tertiary recovery projects to achieve greater production. Environmental concerns should also increase the demands for natural gas because it is a much cleaner burning fuel than oil. The future of compressed natural gas as a fuel for vehicles could also enhance this picture. Based on past activities, it is reasonable to expect at least one cycle of increased drilling activity over the next decade. Several new oil and gas fields may be developed, and expansion and further development of existing fields is anticipated. Future exploration and development does not necessarily mean an increase in the number of producing wells.

SOCIO-ECONOMIC FACTORS (ROSWELL DISTRICT)

The 1990 population of the Roswell District was estimated at 250,580 (Peach and Williams, 1994, as reported in the *Roswell Daily Record*, July 17, 1994). The population density varies from 1 person per square mile in De Baca County to 30 persons per square mile in Curry County. The counties with the lowest population density, generally lower than the district average of 7.9, tend to be rural in character. Those counties with higher population densities tend to have greater urban populations concentrated in cities. The socioeconomic characteristics for each county are dependent on the relative population density and the urban/rural proportions for the total county populations. Table 3-6 summarizes population and density information for the nine southeastern New Mexico counties.

According to the NMSU Cooperative Extension Service (Peach and Williams), Chaves, Lea, Lincoln, Quay and Roosevelt counties are

TABLE 3-6
SOUTHEAST NEW MEXICO
POPULATION AND DENSITY, 1990

County	Population 1990 Census,'90	Population 1992	County Area, square miles	Population density 1990 #/sq. mile	% State population 1990
Chaves	57,849	58,582	6,071	9.5	3.8
Curry	42,207	45,559	1,406	30.0	2.8
De Baca	2,252	2,254	2,325	1.0	0.1
Eddy	48,605	51,111	4,182	11.6	3.2
Guadalupe	4,156	4,079	3,031	1.4	0.2
Lea	55,765	56,649	4,393	12.7	3.7
Lincoln	12,219	13,116	4,831	2.5	0.8
Quay	10,823	10,457	2,875	3.8	0.7
Roosevelt	16,702	17,463	2,449	6.8	1.1
TOTAL	250,578	259,280	31,563	7.9	16.5
New Mexico Total	1,515,069	1,581,830	121,342	12.5	

Source: County and City Data Book, 1994. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census. Table B: Counties - Area and Population.

expected to gain population in the decade between 1990 and 2000. The other four counties in the district are projected to lose population. Chaves County will have the largest gain, 13.66 percent, followed by Roosevelt County with a 9.38 percent gain and Lincoln County with a 7.57 percent gain. The largest loss of population is predicted to occur in De Baca County, where population will drop by 8.79 percent and in Guadalupe County with a drop of 6.79 percent. Changes in the remaining counties will be relatively small.

In the decade between 2000 to 2010, the Extension Service predicts population gains in Chaves (up 13.86 percent), Lea (up 3.15 percent), Lincoln (an increase of 5.91 percent), and Roosevelt counties (up 9.76 percent). Major decreases in population are predicted for De Baca (down 9.35 percent), Eddy (down 2.36 percent), and Guadalupe counties (down 9.16 percent). Changes in the remaining counties would be relatively small.

According to the Rand-McNally Commercial Atlas and Marketing Guide (1984, 115th ed.), the commercial and marketing centers are Roswell, Clovis, Hobbs, Carlsbad, and Artesia. Each city is a hub for transportation including air, rail, and highways, and each is a center for banking and manufacturing. The education system supports primary and secondary education through college. Eastern New Mexico State University, located in Portales, supports branches in

Roswell and Ruidoso. New Mexico State University has a branch located in Carlsbad. Hobbs is the site of the College of the Southwest and New Mexico Junior College. These five cities and their suburbs contain about 71 percent of the four-county population and they represent 56 percent of the population of the district (Table 3-7).

External markets are located about 200 miles away at El Paso and Lubbock in Texas and Albuquerque and Las Cruces, New Mexico.

TABLE 3-7
SOUTHEAST NEW MEXICO
RANKING OF CITIES IN STATE, BY POPULATION

City	Rank in state
Roswell	4
Clovis	7
Hobbs	8
Carlsbad	10
Artesia	14
Portales	15
Lovington	17

Source: New Mexico Agricultural Statistics, 1994. U.S. Department of Agriculture, New Mexico Agricultural Statistics Service.

ROSWELL DISTRICT EMPLOYMENT PROFILE

The non-agricultural sector in the Roswell District employs about 81,150 persons or 14 percent of the total non-agricultural work force employed in the state. The agricultural sector employs about 4,310 persons or 17 percent of the total people employed in the agriculture industry in the state. (Economic Review, 1993.) The mining sector in the district employs 8,208 persons or 53 percent of the total mining employment in the state. (The mining sector includes metals, coal, oil and gas extraction, and non-metallic minerals.) The transportation, communications, and utility sector employs 5,777 persons or about 20 percent of the total employed in that sector in the state.

In 1993, the oil and gas industry employed about 7,352 people in the Roswell District area, which amounts to about 90 percent of the total mining sector employment in the counties comprising the Roswell District. (Energy, Minerals and Natural Resources Department Annual Resources Report, 1994, courtesy of the Resource Users Coalition). This is the fifth largest industry by income in the district and the fourth largest employer. Almost all this income is money coming into the area, where it is distributed as taxes, retail sales, and wholesale receipts for the benefit of all citizens. The oil and gas industry also employs people from outside southeastern New Mexico who are directly employed to explore for, develop, and produce oil and gas in the region.

The average unemployment rate in 1993 for the counties in the district was 7.8 percent, with the low of 6.2 percent in Lea County and the high of 12.5 percent in Guadalupe County. Table 3-8 summarizes southeast New Mexico unemployment rates by county. The per capita annual average income in 1990 within the district ranges between $6,529 in Guadalupe County and $10,701 in Lincoln County. These values are significantly lower than the average state per capita income of $16,297 (1993). Detailed per capita income information is listed in Table 3-9.

Total New Mexico farm and ranch assets at the close of 1993 were $11.8 billion, of which real estate comprised 84 percent of all assets in 1992 and 1993. Farm and ranch debt totalled $1.1 billion, with real estate debt 53 percent of total debt. (New Mexico Agricultural Statistics, 1994.) There were 4,361 farms in southeast

TABLE 3-8
SOUTHEAST NEW MEXICO
UNEMPLOYMENT BY COUNTY, 1993

County	Rate of unemployment, percent
Chaves	8.1
Curry	7.2
De Baca	6.9
Eddy	9.4
Guadalupe	12.5
Lea	6.2
Lincoln	6.7
Quay	6.9
Roosevelt	6.5
AVERAGE	7.8

Source: Economic Review, 1993. Sunwest Bank.

TABLE 3-9
SOUTHEAST NEW MEXICO
PER CAPITA INCOME, 1990

County	Rate of unemployment, percent
Chaves	8.1
Curry	7.2
De Baca	6.9
Eddy	9.4
Guadalupe	12.5
Lea	6.2
Lincoln	6.7
Quay	6.9
Roosevelt	6.5
AVERAGE	7.8

Source: County and City Data Book, 1994. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census. Table B: Counties - Money Income, Poverty, and Housing.

New Mexico in 1992, 30.6 percent of the state total, Table 3-10. The average farm size in the district is 3,903 acres. De Baca County leads at 6,789 acres and Curry County lags at 1,503 acres. The average farm size is one measure of the economic assets held by the agriculture sector and is a measure of the significance of agriculture.

TABLE 3-10
SOUTHEAST NEW MEXICO
CENSUS NUMBER OF FARMS
BY COUNTY, 1992

County	Number of farms
Chaves	592
Curry	610
De Baca	191
Eddy	495
Guadalupe	271
Lea	544
Lincoln	338
Quay	586
Roosevelt	734
Total SE New Mexico	4,961
Total New Mexico	14,274
Percent of NM Total	30.6

Source: New Mexico Agricultural Statistics, 1994. U.S. Department of Agriculture, New Mexico Agricultural Statistics Service.

ROSWELL DISTRICT ECONOMIC PROFILE

In 1994, the agricultural cash receipts for all farm commodities ranged from about 15.4 million dollars for Lincoln County to about 248.8 million dollars for Chaves County (Table 3-11). Livestock products, including cattle and calves and milk wholesale, account for approximately 72 percent of the total (Table 3-12). The other

top-ranking commodities include hay, chile and greenhouse nursery (Table 3-13). Of New Mexico's 32 counties, five of the top 10 counties in agricultural cash receipts are located within the Roswell District.

The non-agricultural industry was led by retail trade with 33.9 percent of gross receipts; followed by services at 16.3 percent; transportation, communications, and utilities at 14.2 percent; wholesale trade at 11.2 percent; and all other sectors less than 10 percent each, with the government sector reported the least at 0.07 percent. Gross receipts from retail trade in the southeast New Mexico nine-county-area amounted to over $1,659,567,000 in 1993, or 13.4 percent of the state total.

New Mexico ranks seventh in oil production in the United States and fourth in gas production. Southeastern New Mexico, including the Roswell District, accounted for 93 percent of the total oil production and 36 percent of the total gas production in the state. The oil and gas industry in southeastern New Mexico generated $1.058 billion from production of oil and $975.4 million from production of gas in 1993 (Table 3-14). The value of oil and gas production from federal lands in the Roswell District was over $874.7 million.

TABLE 3-11
SOUTHEAST NEW MEXICO CASH RECEIPTS: ALL FARM COMMODITIES[1/]

County	1994 Rank	1994 % of State	1992 1000 $	1993 1000 $	1994[2/] 1000 $
Chaves	1	16.3	192,185	214,205	248,750
Curry	3	9.9	138,157	145,472	151,872
De Baca	23	1.1	18,750	20,564	16,827
Eddy	6	5.9	76,001	90,102	89,714
Guadalupe	22	1.1	19,150	20,540	16,851
Lea	9	3.8	49,342	61,422	58,146
Lincoln	26	1.0	17,890	18,734	15,429
Quay	12	2.0	37,811	37,828	30,554
Roosevelt	4	6.7	100,563	102,366	101,761
Total SE New Mexico		47.8	649,849	711,233	729,904
Total New Mexico			1,476,729	1,541,797	1,527,285

[1/] Does not include cash receipts received for livestock grazing. May not sum due to rounding.

[2/] Preliminary

Source: New Mexico Agricultural Statistics, 1994. U.S. Department of Agriculture, New Mexico Agricultural Statistics Service.

TABLE 3-12
SOUTHEAST NEW MEXICO
AGRICULTURAL CASH RECEIPTS: ALL COMMODITIES[1/]

	1992 1000 $	1993 1000 $	1994[2/] 1000 $	Percent
All commodities	1,476,729	1,541,797	1,527,285	100.00
Livestock products	1,025,172	1,123,329	1,098,886	71.95
Crops	451,557	418,468	428,399	28.05

[1/] Does not include cash receipts received for livestock grazing. May not sum due to rounding.

[2/] Preliminary.

Source: New Mexico Agricultural Statistics, 1994. U.S. Department of Agriculture, New Mexico Agricultural Statistics Service.

TABLE 3-13
SOUTHEAST NEW MEXICO
AGRICULTURAL CASH RECEIPTS: ALL COMMODITIES, BY RANK[1/]

	Rank	1992 1000 $	1993 1000 $	1994[2/] 1000 $	Percent total receipts
Cattle and calves	1	709,526	763,886	661,626	43.3
Milk wholesale	2	258,884	300,339	382,356	25.0
Hay	3	64,331	73,421	81,738	5.4
Chile	4	67,379	56,077	55,868	3.7
Greenhouse nursery	5	43,413	37,181	41,232	2.7
TOTAL		1,143,533	1,230,904	1,222,820	80.1

[1/] Does not include cash receipts received for livestock grazing. May not sum due to rounding.

[2/] Preliminary.

Source: New Mexico Agricultural Statistics, 1994. U.S. Department of Agriculture, New Mexico Agricultural Statistics Service.

TABLE 3-14
SOUTHEAST NEW MEXICO OIL AND GAS PRODUCTION AND VALUE, 1993

County	Marketed production, BBL or MCF	Value, millions of dollars	Percent from Federal Lands	Percent from State Lands	Percent from Fee Lands
Oil Production					
Chaves	1,333,024	20.8	28.9	46.3	24.7
Eddy	21,339,114	355.1	62.2	23.6	14.2
Lea	41,442,970	672.7	26.6	49.9	23.5
Roosevelt	593,046	9.7	54.5	7	38.4
TOTAL	64,708,154	1,058.3			
Gas Production					
Chaves	36,656,666	74.3	51.8	37.9	10.3
Eddy	222,858,805	440.9	59.9	22.2	17.8
Lea	252,328,719	453.8	34.9	36.1	28.9
Roosevelt	2,671,202	6.4	40.1	7.6	52.4
TOTAL	51,4515,392	975.4			

Source: Energy, Minerals and Natural Resources Department Annual Resources Report (1996), courtesy of Resources Users Coalition.

REVENUE GENERATED FROM FEDERAL MINERAL LEASING

Federal mineral leases generate revenues in all of the counties of the district. Leasing generates revenues through bonuses from private companies to acquire leases and rentals based on the acreage included in the leases. Production generates revenues through royalties returned to the U.S. Treasury through the Department of the Interior's Minerals Management Service. Royalties are based on the gross sales of mineral commodities. In fiscal year 1991, the leasing of federal minerals generated about $125 million (Tables 3-15 and 3-16).

Direct severance and production taxes are paid to New Mexico from production of oil and gas. Royalties are paid to mineral owners including the federal government, New Mexico Commissioner of Public Lands for the state, and individuals. Fifty percent of the revenue received from public lands, less an administrative fee, is returned to the State of New Mexico. The New Mexico State treasury received approximately $58.1 million as its share of the mineral leasing revenues. The Roswell Resource Area generates about seven percent of the revenues from mineral leasing for the Roswell District while the Carlsbad Resource Area generates about 93 percent of the revenues from mineral leasing.

Oil leasing generated $68.3 million, gas leasing generated $38.1 million, bonuses and rentals generated $14.1 million, solid minerals generated $4.4 million and carbon dioxide generated $45 thousand. The Carlsbad Resource Area reported over $116 million and the Roswell Resource Area reported less than $9 million or 7 percent of the total. Eddy

County led all other counties of the district with $63.9 million; Lea County was next with $52.4 million; Chaves County was third with $6.4 million; Roosevelt County with $2.1 million generated; and all other counties with less than 1 percent each (Table 3-16).

TABLE 3-15
ROSWELL DISTRICT
LEASING OF FEDERAL MINERALS

Leasing type	Value, millions of dollars
Oil leasing	68.3
Gas leasing	38.1
Bonuses/rentals	14.1
Solids	4.4
Carbon dioxide	0.045
TOTAL	124.945

Data for fiscal year 1991. (Environmental Assessment No's. NM-066-95-931 and NM-067-95-931, December, 1995.)

TABLE 3-16
ROSWELL DISTRICT
LEASING OF FEDERAL MINERALS BY COUNTY

County	Value, millions of dollars	Percent
Chaves	6.4	5.1
Eddy	63.9	51.1
Lea	52.4	41.7
Roosevelt	2.1	1.7
all other counties	0.145	0.1
TOTAL	124.945	99.7

Data for fiscal year 1991. (Environmental Assessment No's. NM-066-95-931 and NM-067-95-931, December, 1995.)

Insert the following text in the Draft RMP/RMPA/EIS on page 3-71, column 2, following paragraph 4. This text replaces the discussion of socioeconomics in the Roswell Resource Area on pages 3-71 through 3-73 of the Draft RMP/RMPA/EIS.

SOCIO-ECONOMICS SPECIFIC TO THE ROSWELL RESOURCE AREA

Socio-economic factors related to oil and gas resources and those discussed in the context of the Roswell District are at the beginning of this chapter.

REVENUES GENERATED FROM GRAZING, RECREATION AND MINERAL MATERIAL DISPOSAL ACTIVITIES

Livestock operators pay for grazing privileges on the public lands. In fiscal year 1993, grazing activities generated about $620,000 in federal receipts.

Recreationists pay user fees for certain recreational activities within the resource area. The Roswell Resource Area received about $28,000 in revenues from recreationists in 1993 primarily for camping and day use activities at Valley of Fires Recreation Area. The Southwest Natural and Cultural Heritage Association bookstore at Valley of Fires had sales of $24,055. Additional fees were collected for special recreation use permits.

The Resource Area received an average of $24,500 in revenues per year from mineral material sales in the period from 1976-1995. Local and state government agencies received an average of $95,000 in free use mineral materials per year over the same twenty-year period.

PAYMENT IN LIEU OF TAXES

Local governments across the country receive the payments for non-taxable federal lands located within the counties under the Payments In Lieu of Taxes (PILT) Law of 1976. New Mexico received over $10.6 million in fiscal year 1994 for tax-exempt lands (U. S. Bureau of Land Management). Table 3-17 summarizes PILT payments for counties located in the Roswell District.

TABLE 3-17
ROSWELL DISTRICT
PAYMENT IN LIEU OF TAXES (PILT),
FISCAL YEAR 1994

County	Payment, $
Chaves	851,561
Curry	0
De Baca	24,593
Eddy	932,438
Guadalupe	36,405
Lea	299,220
Lincoln	340,938
Quay	1,300
Roosevelt	7,316
TOTAL	2,493,771

Source: Bureau of Land Management, 1996.

Insert the following text and tables in the Draft RMP/RMPA/EIS on page 3-71, column 1, following paragraph 6. The tables in this section are numbered with the prefix "3-" to differentiate them from tables published in the Draft RMP/RMPA/EIS.

Animal Damage Control

The topic of animal damage control (ADC) was not addressed in detail in the Draft Roswell RMP/EIS. The ADC program is administered by the Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS). At the time the Draft RMP/EIS was being prepared, the practice of implementing ADC was that the BLM assessed the environmental impacts of the proposals made by the USDA in its annual ADC plans. Each plan included the areas and methods of control determined appropriate by the BLM and was formulated to meet the short-term (annual), site-specific needs for ADC. Changes in control areas or techniques could be made on an annual basis.

Following the publication of the Draft RMP/EIS, the BLM entered into a nationwide Master Memorandum of Understanding (MOU) with APHIS, which was approved on March 21, 1995. Under that MOU, the responsibility of the BLM has narrowed to a role primarily of review and consultation. Preparation of wildlife damage management plans and NEPA documents is now the responsibility of APHIS. The locations and techniques of ADC no longer will be determined by the BLM in annual plans and NEPA documents. Under the MOU, wildlife damage management plans now will include areas where mitigation or restriction of ADC activities may be needed to comply with the BLM's land use plans. Control areas and techniques established by the BLM would be reviewed annually and modified, if needed. If significant changes in control areas or techniques are needed, the modifications would be addressed through the land use plan (RMP) amendment process.

Predator damage management (PDM) is conducted by APHIS-ADC to protect livestock, wildlife, agricultural crops, property and human health and safety. In the Roswell District in 1995, APHIS-ADC had active agreements to conduct PDM on about 2.8 million acres administered by the BLM. (*Note to reader:* For purposes of describing some existing ADC activities, public lands in the **Roswell District** may be used as a basis, because some information on ADC activities is described district-wide, not by BLM resource area. Where possible, information will be provided by county.) In most instances, ADC is not conducted over entire grazing allotments, but only in areas or pastures where livestock (primarily sheep, cattle, or goats) are concentrated during lambing, calving or kidding, or where losses have occurred previously.

Cattle and calves are most likely to be killed, injured or harassed by predators during calving. Sheep, lambs, goats and kids are subject to predation throughout the year. Under certain conditions, predators may affect deer and pronghorn populations. Some predators, especially black bear and mountain lion, affect not only livestock and wildlife, but may pose human safety and property threats, as well.

Because of land ownership patterns, the areas of most concern relative to predator control in the Roswell Resource Area are Chaves and Lincoln counties. Table 3-18 provides information about ADC activities in those two counties. Tables 3-19 and 3-20 provide information about animals killed during predator damage management activities. Because of the lack of information on predator populations, accurate numbers of predator species populations and even reasonable estimates of population numbers are unavailable for comparison with the information in these tables.

TABLE 3-18
SUMMARY OF PREDATOR DAMAGE TO LIVESTOCK
CHAVES AND LINCOLN COUNTIES[1/]
1995

	Chaves County[2/]			Lincoln County		
	Livestock Reported Killed by Predators	Verified Livestock Loss to Predators	Livestock Protected	Livestock Reported Killed by Predators	Verified Livestock Loss to Predators	Livestock Protected
Lambs	2,313	168	48,052	2,295	144	50,566
Sheep	66	27	51,752	237	24	70,019
Adult Goats	46	16	9,864	60	3	15,090
Kid Goats	435	12	8,763	254	0	12,049
Cattle	0	0	6,225	0	0	2,921
Calves	67	2	3,463	97	8	1,088
Poultry	0	0		1	0	0
TOTAL	2,927	225	128,119	2,944	179	151,733

[1/] Figures represent livestock on all land ownerships.

[2/] Figures for Chaves County include the portion of the county in the Carlsbad Resource Area.

Source: USDA, APHIS-ADC, 1996

TABLE 3-19
SPECIES TAKE BY PREDATOR DAMAGE MANAGEMENT ACTIVITIES
on PUBLIC LANDS, ROSWELL DISTRICT
1995

Species	Number Killed[1/]
Coyote	265
Bobcat	10
Gray fox	9
Badger	2
Javelina	1
Mule deer	6
Raccoon	1
Porcupine	10
TOTAL	304

1/ Includes both target and nontarget animals.

Source: APHIS-ADC, 1996.

TABLE 3-20
NONTARGET ANIMALS TAKEN BY PREDATOR DAMAGE MANAGEMENT ACTIVITIES
ALL LAND OWNERSHIPS, ROSWELL DISTRICT
1995

Species	Number	Total Number Killed	Total Number Released
Badger	9	5	4
Bobcat	1	1	0
Gray fox	51	34	17
Kit fox	5	5	0
Swift fox	15	15	0
Mule deer	9	7	2
Javelina	2	2	0
Striped skunk	35	35	0
Porcupine	26	26	0
Raccoon	3	3	0
TOTAL	152	133	19

Source: APHIS-ADC, 1996.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This chapter presents the environmental consequences of the Proposed Plan described in Chapter 2. Both beneficial and adverse effects (impacts) are described. The environmental consequences on some resources and resource uses were not specifically identified as planning issues. However, impacts to those resources and uses are analyzed and discussed if they would be caused by an action that is part of the Proposed Plan. In many cases, minimal or insignificant impacts are not specifically addressed. An effort was made to concentrate on the significant impacts of proposed actions.

Impacts described in this chapter are estimates of effect based on the Proposed Plan. In some cases, existing data were used; in others, very little data were available. Lack of data contributes a degree of uncertainty to the impact estimates. In many cases, the analysis includes professional judgements and projections of anticipated actions and levels of activity with the intent of providing adequate and reasonable discussions of the effects of the Proposed Plan.

Assumptions used in analyzing the environmental consequences are described in Appendix 18 in the Draft RMP/RMPA/EIS. The assumptions are based on previous events, experience of RMP team members, and knowledge of the resources in the planning area.

This chapter is arranged so that the impacts of the Proposed Plan are presented for each resource program or topic. For example, the impacts to wildlife habitat from all sources are discussed in the same section. The topics discussed in the section on wildlife habitat are grouped so that the effects of all facets of mineral activity on wildlife habitat are together, as are the effects of all facets of recreation activity, and so on. The five ACECs proposed in this plan are treated as separate resource programs for the purpose of describing impacts. The impacts to ACECs are arranged as described above. Impacts associated with activities in each ACEC are the same as those identified for similar actions outside the ACEC, unless otherwise noted.

Effects on a given environmental component caused by a particular management action are discussed if they would occur and were considered to be important or significant. Similarly, irreversible or irretrievable commitments of resources, unavoidable adverse effects, and cumulative effects are discussed in the text if they would occur. Otherwise, such effects are not discussed.

The analysis of impacts on oil and gas operations is in a different format from most of the other impact discussions. The primary impacts to oil and gas stem from requirements placed on oil and gas operations. In addition to discussions of impacts resulting from the application of leasing stipulations, there are specific discussions of the Surface Use and Occupancy Requirements (Appendix 3), the Roswell District Conditions of Approval (Appendix 4), and the Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas (Appendix 5).

Unless specified otherwise, impacts described below in this section are considered to apply to both the Carlsbad and Roswell Resource Areas. All cost estimates or amounts are based on data available at the time of this writing. In this analysis, acreage figures and estimates of wells drilled or not drilled are based on the federal mineral estate managed for leasing by the BLM. Some of the acreage shown in discussions of "no leasing" or "no surface occupancy" is leased by the BLM, but lies beneath surface managed by state agencies or other federal agencies, or under privately owned surface. For purposes of this analysis, impacts to oil and gas development are assumed to occur in areas of high or moderate potential for hydrocarbons and would primarily affect BLM-administered lands.

The magnitude of impacts associated with implementation of the Roswell District Standard Conditions of Approval (Appendix 4) would not change over current management, because the requirements in Appendix 4 are comprised primarily of existing standard procedures and operations.

Installing netting or other barriers over open-top tanks, reserve pits, disposal pits, or other open pits to prevent entry by wildlife, and the installation of heater-treater caps, could result in some increased costs to operators.

Cultural resource inventories, possible construction delays, and occasional drilling site relocations to avoid cultural sites increase oil and gas well development costs. These cultural survey costs (averaging approximately $400.00 for a well pad and one-quarter mile of access road), are currently figured in the cost of a standard drilling project. Because these practices are currently required, no additional impacts are expected.

The standard practice of avoiding ephemeral and perennial drainages and wetland/riparian areas is currently employed and would not produce additional impacts.

Burying oil and gas pipelines provides the lines with a certain level of protection from vandalism. Burying could also result in increased construction and maintenance costs of up to 15 to 30 percent per mile of pipeline, over surface installation, in both the short term and long term. The range of increase costs is based on variables such as terrain, type and size of pipe, and construction costs which would vary by contractor.

Impacts associated with managing oil and gas activities on lands on which the surface is administered by other surface management agencies (e.g., the U.S. Forest Service or the National Park Service) would be the same as those identified for public lands having the same type of management prescriptions (closed to leasing, NSO, CSU, etc.). See Chapter 2 for a description of current and proposed management prescriptions planned by these agencies.

Impacts associated with leasing oil and gas with the Potash Stipulation in the Carlsbad Resource Area's 497,000-acre potash area could result in higher operating costs or preclude oil and gas development at some locations. In other situations, drilling sites may have to be relocated, causing increased project construction costs or making the project cost prohibitive. In some areas, directional drilling could be required. For a shallow directional well, drilling and completion costs could increase as much as $200,000 over the $350,000-$400,000 cost of a shallow, straight hole. The costs could increase by as much as $700,000 for a deep directional well, over the $525,000-$600,000 cost of a

conventional deep well. Operating costs for producing directional wells could also increase by up to 50 percent per well. Directional drilling requirements could make some proposals cost prohibitive. If a well could not be drilled due to this constraint, the company would lose production and revenue, the federal government would lose royalties, and the public would lose a potential energy resource.

Under current interpretation of the Secretary's Order designating the Oil-Potash Area, drilling prohibitions could also result in the loss of federal oil and gas royalties through the unprotected drainage of federal hydrocarbons. The possible loss of federal royalties from drainage could be up to $500,000 per undrilled protective well. In the fiscal year of October 1, 1992 to September 30, 1993, 347 Applications for Permit to Drill (APDs) in the Secretary's Oil Potash Area were received. Of these 347 APDs, 67 were denied, because of conflicts with potash mining. Some of the 280 approved wells were not drilled because restrictions, such as directional drilling or drilling from islands, made them uneconomical.

Impacts to oil and gas activities in the Dark Canyon area have been analyzed in detail in the Final Dark Canyon Environmental Impact Statement. Impacts associated with oil and gas activities in the East Guadalupe Escarpment Wildlife Habitat Area have been analyzed in an environmental analysis prepared by the Carlsbad Resource Area staff.

Projected drilling activity and associated surface disturbance estimates for the Carlsbad and Roswell resource areas are included in Tables A18-1 and A18-2, respectively, in Appendix 18 in the Draft RMP/RMPA/EIS. Impacts associated with continuing to not allow water disposal pits on public land in certain areas could result in increased costs to operators of up to $1.75 per barrel when hauled up to 24 miles to an approved water disposal facility and $2.60 per barrel when hauled from 25 to 52 miles. The costs of doing business could be increased in both the short term and long term.

Under the Proposed Plan the revegetation of disturbed areas would be required and could include techniques (such as deeper rips, different seed mixtures, mulching, removal of caliche from roads or pads, and fertilizer application), which would enhance reclamation efforts. Surface reclamation in accordance with standard operating procedures could result in costs to operators of up to $1,500 per acre. Techniques designed to enhance revegetation would result in increased initial costs, but in the long run should produce savings to operators. Savings would result from having to conduct revegetation efforts only once, whereas using standard techniques has often required repeated reclamation attempts in order to ensure adequate revegetation.

Impacts associated with painting permanent surface facilities or and equipment approved by the BLM are deemed to be negligible, because prudent operators paint their equipment anyway, to protect their investment from the elements. Painting could result in higher short-term costs for operators who normally do not paint their equipment.

The prairie chicken timing and controlled surface use restrictions could make it difficult for a company to react quickly to the sudden changes in market conditions inherent in the oil and gas industry. Operators would be required to coordinate their drilling programs with the timing restrictions in order to plan drilling activities and avoid costly delays. Exceptions to the seasonal restrictions, while sometimes possible, are dependent on uncontrollable factors such as weather and animal distribution, and cannot be assumed. Even though there is a shortened season for drilling wells in these areas, there should still be enough time to efficiently drill. Another impact associated with this drilling season could be finding enough rigs to drill and complete wells during this shortened drilling period. Rig availability is dependent upon many factors, with one uncontrolled factor being regional activity.

NO SURFACE OCCUPANCY STIPULATION

The no surface occupancy (NSO) leasing stipulation would be applied in every case to specific areas, such as the special management areas in the Carlsbad Resource Area, and more

generally to features such as wildlife habitat projects, raptor nests and heronries, slopes, prairie dog towns, and springs and seeps, when needed. These latter areas are described in the Surface Use and Occupancy Requirements, Appendix 3. In the areas affected by the Surface Use and Occupancy Requirements, the NSO stipulation would be implemented on a case-by-case basis for each individual feature following NEPA analysis. The use of the NSO stipulation in these areas in no way indicates that the maximum buffer distance would be implemented in every case. Impacts associated with the implementation of the NSO Stipulation on these areas would be the same as those described for lands having the "blanket" NSO stipulation (e.g., the special management areas).

When applied to leasing, NSO stipulations could dissuade bidders from purchasing lease parcels. When applied to approvals, proponents of new development could be caused to relocate drilling projects, thereby increasing construction costs of each project, and in some instances making oil and gas development impossible or cost prohibitive. Some lands may have to be developed through directional well drilling.

Under the Proposed Plan, NSO leasing stipulations would be applied to 39,306 acres in the RRA and 78,327 acres in the CRA. These figures include federal mineral estate leased by the BLM under surface estate managed by other agencies. Of the 39,306 acres in the RRA, 36,746 acres are in areas with high or moderate hydrocarbon potential. All the affected acreage in the CRA is in areas of high or moderate hydrocarbon potential. Over the next twenty years, as many as four wells in the RRA and 99 wells in the CRA may be affected by application of no surface occupancy requirements. The immediate and long-term effects of no surface occupancy restrictions could include lost production opportunities, increased drilling and production costs, and loss of royalties. Some leases with the NSO stipulations could also be subject to drainage of hydrocarbons by non-federal wells. In this situation, a lessee would be responsible for payment of lost royalties unless an economic directional well cannot be drilled. If an economic well is not possible, all royalties would be lost.

OIL AND GAS LEASING CLOSURES

Under the Proposed Plan, 392,009 acres in the RRA and 109,517 acres in the CRA are designated closed to future oil and gas leasing. These figures include federal mineral estate administered by the BLM under surface estate managed by other agencies. Of the 392,009 acres in the RRA proposed to be closed to oil and gas leasing, 245,378 acres are in areas with high or moderate hydrocarbon potential, which is about three percent of the federal mineral estate in the resource area. All of the 109,517 acres in the CRA proposed to be closed to oil and gas leasing are in areas with high or moderate hydrocarbon potential, which is about three percent of the federal mineral estate in the resource area. The actual closure of all the lands in areas of high or moderate hydrocarbon potential that are designated closed to leasing could mean that as many as 41 wells in the RRA and 127 wells in the CRA would not be drilled during the twenty-year planning period. However, because there are existing leases on lands designated closed to leasing, fewer wells actually would be affected. A no-leasing decision does not affect existing leases. Oil and gas exploration and development would continue on existing leases on a case-by-case basis until lease expiration or abandonment. At that time, new leases would not be issued on those areas. Oil and gas development opportunities would continue to be unavailable on areas without prior leases for which the no-leasing decision has been made.

Lands in the Roswell District in high or moderate potential oil and gas areas that are proposed to be closed to oil and gas leasing under any alternative represent less than five percent of the federal oil and gas mineral estate in the Roswell District. The availability of oil and gas should not be significantly affected. Lands subject to closure could also be subject to drainage from wells outside the closed lands, and the federal government could lose royalties. The long-term effects of oil and gas closures would include lost production opportunities, lost royalties and lost job opportunities, although the impacts are minimal, given the small acreage proposed to be closed. Under the Proposed Plan, the increase of 51,717 acres district-wide in no-leasing acreage over current management could

represent a loss of bonus bids of up to $2,378,982, based on a rate of $46 per acre, which is the average per-acre bid for all New Mexico tracts at three 1993 lease sales. This is equivalent to about two percent of bonus bids expected for the planning period, based on an estimated $1,600,000 in bonus bids per sale for four sales a year.

EFFECTS OF THE SURFACE USE AND OCCUPANCY REQUIREMENTS

In general, the effects of the Surface Use and Occupancy Requirements on oil and gas development would be the same as those described above for timing, controlled surface use, and no surface occupancy stipulations. See Appendix 3 for a description of the proposed management and affected acreage.

The effects of implementing the prairie chicken timing and controlled surface use restrictions would be similar to the effects of the timing limitations under current management. A primary difference from current, however, is that set-backs from prairie chicken leks would slightly increase the amount of area that could not be occupied for development. These impacts would be the same as those for the no surface occupancy stipulation.

The effect of implementing surface use restrictions in prairie dog towns to reduce or eliminate surface disturbance would be the same as those described for other lands with surface occupancy limitations. The limitations in prairie dog towns could be applied as leasing stipulations on new leases or as conditions of approval on use authorizations. Because of the small number of acres involved and the limited extent of the prairie dog towns, the effect of the restriction is not expected to be significant.

Under the use and occupancy requirements, new surface disturbance may be prohibited within up to 200 meters of certain features, to protect natural resource values. Moving surface disturbing activities by up to 200 meters from a particular feature has been, and is currently, the practice. The effect of the requirements would range from no additional impact over current management, to some additional amount of the same kinds of impacts described for lands having the no surface occupancy stipulation.

IMPACTS FROM USING PRACTICES FOR DRILLING IN CAVE AND KARST AREAS

The potential impacts of using the Practices for Drilling in Cave and Karst Areas (Appendix 5) are discussed below in terms of discrete requirements or actions that may be required for wells drilled in cave or karst areas.

Detection Methods

Impacts associated with implementing detection methods could range from no impact, to a delay in approving the drilling location or having to reschedule drilling plans.

Surface Mitigation

Surface mitigation measures for cave or karst protection would be required in the event that the detection methods indicate the presence of cave or karst features.

If a feature is detected, a developer could be affected by one or more impacts. A delay in approving the drilling location could occur. The relocation of the drilling location, with the possibility of directional drilling, could result in higher drilling costs. The rejection of the drilling location could result in lost production and revenues if a suitable well location could not be found. The federal government could lose royalties and the public could lose a potential energy resource. Current common practice is to relocate potential drilling sites up to 200 meters to minimize potential impacts to cave or karst, with no significant adverse effects to operators.

Impacts to developers resulting from implementing practices to minimize potential effects from reserve pit spills or leakage could range from no additional impact (as these practices have long been employed to mitigate impacts), to increased operational costs of up to $40,000 per well, depending on the type of practice used.

Impacts to developers resulting from implementing practices on a per well basis to minimize potential effects from leaking tanks or pipelines could result in additional costs of up to 10 percent for the installation of leak detection systems for pipelines or tanks. An increase of 50 percent in additional costs for the use of permanent liners in storage tank areas may occur. Up to 10 percent additional cost for the use of differential pressure shut-off valves and corrosion-inhibiting coatings and cathodic protection could occur if these practices are employed.

Impacts to developers resulting from implementing practices to minimize the potential effects of vented or escaping gases settling in caves would result in no new impacts, since practices would remain the same as those currently required.

Subsurface Mitigation

Impacts to developers resulting from implementing drilling practices to minimize potential effects to caves or karst would result in increased costs due to the type of drilling operation required (i.e., drilling with cable tool or rotary rigs and using fresh water mud or air as a circulating medium). However, most operators are currently using these drilling practices in the identified cave or karst areas, so the only operators affected would be those not using these techniques in high porosity/permeability zones. Using these techniques versus using conventional techniques could result in increased operational costs of up to $25,000 per well.

Under the Proposed Plan, implementing casing and cementing practices to minimize potential effects on caves or karst could increase costs of up to $70,000 per well. If a bit drop of four or more feet and 75 percent circulation loss is encountered simultaneously, drilling would immediately stop and the BLM would be notified. If this occurred, costs of up to $6000 per day could result from the rig being on standby. In an extreme case, if the problem could not be resolved, the well would be plugged, which may result in lost production and revenue, the federal government could lose royalties, and the public could lose a potential energy resource. In the Roswell District, however, a well has never been required to be plugged due to bit drop and lost circulation problems, and the likelihood of the BLM requiring a well to be plugged is small.

Annual pressure tests on specified wells could result in increased costs of up to $200 a year, per well. If test results indicate casing failure, remediation would be required and costs would increase.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Impacts from ACEC designation on oil and gas leasing and development would not differ from the impacts described above. Fort Stanton already is closed to leasing; no additional impacts would result. In the Overflow Wetlands, North Pecos River, Roswell Caves Complex and Mescalero Sands proposed ACECs, the use of controlled surface use (CSU) or no surface occupancy (NSO) stipulations, and closures to leasing, would affect minute acreages.

In some cases, oil and gas leases already exist in the proposed ACECs, and potential development would continue under the terms of those leases and appropriate conditions of approval. The impacts to developers from these requirements would be minimal. The use of CSU or NSO stipulations and closures to leasing on presently unleased areas would create greater impacts (similar to those described above) than under current management, because preexisting rights of development do not exist. However, the amount of unleased mineral estate is very small in the Roswell Resource Area and the magnitude of impacts would be very small.

Acreage withdrawn from locatable mineral entry would reduce opportunities to explore and develop mineral resources. While the potential is high for occurrence of locatable minerals in the areas currently withdrawn and those proposed for withdrawal, the long-term effect is minimal because of the relatively small amount of acreage that would be withdrawn.

Requirements for plans of operation, reclamation bonds, and environmental assessments for mining proposals (other than casual use) in areas closed to off-highway vehicle use, ACECs or lands under wilderness review protect natural resources, but also increase the cost of exploration and development for mining proponents, and could produce mining delays. Costs of mitigation in areas covered by plans of operation would also increase the cost of doing business in both the short term and long term. In the extreme, projects could be precluded because of their potential effects. However, because of the low level of mining activity anticipated, these impacts would be insignificant.

Because of the relatively small amount of acreage proposed for withdrawal compared to the large area of high mineral potential available for development, there are no proposed management actions that would significantly affect the availability of locatable minerals.

Mining obviously produces an irreversible and irretrievable commitment of resources. The magnitude of that commitment would vary with the amount of mining activity (exploration and extraction) performed yearly on mining claims, but activity is expected to be at low levels. A positive economic benefit could result from the mining activities.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

The withdrawal of all five proposed ACECs from mineral entry would preclude impacts from mining. The impacts to the mining industry from mineral withdrawals in the ACECs would be the same as those described previously for other mineral withdrawals.

Opportunities for exploration and leasing would be lost on about 281 acres already closed to the leasing of solid minerals. However, the impacts are expected to be minimal due to the small area affected and the low potential for development.

Under the Proposed Plan, the areas proposed for closure to solid mineral leasing are relatively small. Together they represent less than one percent of the federal mineral estate in the Roswell Resource Area.

The Surface Use and Occupancy Requirements, especially no surface occupancy restrictions, would affect solid leasable mineral development by limiting use. In many cases, mitigation measures imposed to reduce impacts of exploration and development may increase the cost of doing business by delaying projects, forcing alternative areas for development, restricting activities, and increasing reclamation costs. In rare cases, some activities may be precluded.

Minerals removed and sold would result in an irreversible and irretrievable loss of the mineral resource, although that commitment is expected to be small due to the limited demand for solid leasable minerals. The Surface Use and Occupancy Requirements could increase costs of doing business in the short term and, in some cases, the long term.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

The impacts to developers interested in mining solid leasable minerals that result from the closure of lands would be the same as those identified previously for other lands closed to leasing.

The no surface occupancy restrictions, seasonal restrictions, and the Surface Use and Occupancy Requirements would adversely affect the mining of mineral materials district-wide. Restrictions on removing mineral materials may increase the costs of doing business by delaying projects, by forcing an alternative source for mineral materials, by increasing hauling distances and hauling costs, by limiting flexibility in the timing of activities, by increasing reclamation costs, and by precluding some activities. However, the acreage proposed for closure to the disposal of saleable minerals comprises a relatively small portion of the Roswell Resource Area and should not significantly affect the availability of mineral materials. Additional costs associated with increased haul distances in areas where material is not readily available would have a negative long-term impact on the entities that are dependent on mineral materials. Materials are generally readily available throughout the resource area including lands adjacent to those proposed for closure.

A negative effect of pit closures may be increased costs associated with longer haul distances in areas where material is not readily available. In general, however, the effects of closing depleted or unnecessary pits are expected to be small, since mineral materials are generally readily available from other nearby sites.

An irreversible and irretrievable commitment of resources obviously occurs when mining is conducted and the minerals are sold. However, economic benefits are realized from the sale and future use of the materials.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Impacts associated with closing the lands in ACECs (except Fort Stanton) to mineral material disposal would be minimal and are the same as described previously.

The presence of cultural resources in an area proposed for a right-of-way, permit or lease would, under most circumstances, cause delays in construction and possibly increase the length of the right-of-way due to the need to re-route the project to avoid impacts to the cultural resources. This could increase the cost of construction of the project. In a situation where cultural resources could not be avoided and site testing or excavation is required, increases in project cost would result, sometimes making the project cost-prohibitive.

The majority of realty actions require short-term uses of lands, and long-term productivity is restored upon rehabilitation of disturbed areas. Unavoidable adverse economic impacts would result from constraints for resource protection that affect the routes selected, and from timing restrictions on construction activities. The greatest impact would be in those areas which would be managed as no surface occupancy areas and avoidance or exclusion areas for rights-of-way, permits, or leases. Short-term impacts on long-term productivity due to exclusion of rights-of-way, permits, or lease development could include increased project costs due to an increase in the length of the right-of-way to avoid restricted right-of-way areas, or no surface occupancy areas in the case of oil and gas leases.

Right-of-way exclusion areas from recreation, cave, riparian and wetland areas would require proponents of new, major rights-of-way developments to reroute projects, causing increases in the distance and construction costs of each project. In the larger exclusion areas such as Little Black Peak, Carrizozo Lava Flow and Mescalero Sands, the impacts of rerouting projects would be much greater than in the smaller exclusion areas, in some instances making the construction projects cost-prohibitive. Major rights-of-way would be excluded about 93,455 acres in 15 areas. Excluding rights-of-way, permits and leases would cause proponents of new development to reroute projects, causing increases in the distance and construction costs of each project, and in some instances making construction projects cost-prohibitive.

Right-of-way avoidance areas would produce essentially the same impacts as those described for exclusion areas, except that major rights-of-way could be allowed in avoidance areas on a case-by-case basis if no appropriate alternative location exists. Major rights-of-way would be avoided about 257,525 acres. Right-of-way avoidance areas would result in increased construction cost and have a negative economic impact on the proponent. Right-of-way avoidance areas would be less restrictive than exclusion areas.

Land tenure adjustments would occur only if the benefits outweigh any adverse impacts, and if there are no significant impacts that cannot be mitigated. The ability to sell or exchange land and to issue Recreation and Public Purposes (R&PP) leases and patents would benefit communities and industry. The sale or exchange of isolated tracts would result in the disposal of lands that are difficult and uneconomical to manage. Negative impacts would be associated with the creation of split ownership if the mineral and surface estate are not kept intact. Positive long-term impacts would be increased efficiency and lower costs in managing the public lands.

Lands would be removed from the public land base when sold or exchanged. Under a land exchange, however, lands of comparable value would be obtained. The short-term impacts of land adjustments would affect the long-term management of public lands in the planning area.

A more active land tenure program would occur under the Proposed Plan, compared with current management. Relying primarily on land exchanges could result in a more desirable land ownership pattern than relying primarily on sales. The main benefit of the exchange method is that it tends to balance the impacts of disposal with those of acquisition. Lands would be permanently lost to use by the public when sold or exchanged. Under exchange, however, lands of comparable value would be obtained.

The disposal of public lands through sale or land exchange, with retention of the mineral estate in

federal ownership, would complicate future management of the federal mineral estate. Split ownership of the mineral and surface estates often creates public confusion regarding the ownership and management of those lands.

The ability to sell or exchange land and to issue R&PP leases and patents would benefit communities and industry. The sale or exchange of isolated tracts would result in the disposal of lands that are difficult and uneconomical to manage, and would benefit private landowners whose lands currently have federal land inholdings. Disposal of suitable tracts within the resource area would be unlikely to cause any significant impact to the public land resource values.

The acquisition of easements would allow the BLM to improve accessibility to public land, resolve conflicts and provide better opportunity for the management of the public lands. Acquisitions would benefit recreation, cultural, visual, wildlife and other resource values. Consolidation of public land would significantly improve management efficiency and effectiveness, reduce management cost, and block-up key areas to provide improved protection for resources.

In the Roswell Resource Area, seasonal or timing restrictions and other mitigation measures to protect resource values would affect placement of construction projects. Construction projects may have to be delayed or rerouted to protect resources such as cultural or historical values, wildlife and habitat in prairie chicken and raptor areas, or T&E species. This could cause increased distances for construction projects, delays in beginning construction, longer construction periods, and associated increases in costs. The delay in construction projects from the timing stipulation could be as many as three months. Seasonal restrictions for the Carlsbad Resource Area would be the same as those described for the Roswell Resource Area.

For the Roswell and Carlsbad Resource Areas, impacts on rights-of-way development from the Surface Use and Occupancy Requirements and setbacks could cause delays in construction and increases in distance from realignments. Increased construction costs would result. Impacts from applying no surface occupancy restrictions would be the same as those addressed for rights-of-way exclusion areas.

The majority of realty actions require short-term uses of lands. Long-term productivity is restored upon rehabilitation. Unavoidable adverse economic impacts would result from constraints applied for resource protection that affect the routes selected and the timing on construction activities. The greatest impact would be on specific areas (e.g. caves or floodplains) affected by the Surface Use and Occupancy Requirements and those areas listed as avoidance or exclusion areas for major rights-of-way. Cumulative impacts would be increased costs to rights-of-way proponents.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Impacts to rights-of-way proposed for development in ACECs would be the same as those described previously for exclusion and avoidance areas. The restriction of no surface disturbing activities within up to 200 meters of nine caves in the Roswell Cave Complex ACEC would have the same impacts on rights-of-way as those described previously for right-of-way exclusion areas.

For all the proposed ACECs, impacts from land acquisition would be the same as those described previously for land tenure adjustments. Land acquisition would improve manageability by consolidating ownership and eliminating potential use conflicts.

Maintenance of the shortgrass aspect in the grasslands plant community would decrease the amount and density of brush species, which would lead to an increase in forage available to livestock.

Not allowing new netwire fence construction could limit flexibility in making changes in sheep allotments, because current management practices rely heavily on netwire pasture fencing. Replacing existing netwire fences with barbed wire fences could have a severe impact on sheep allotments, because netwire fencing is used to control sheep, goats and predators. Installing antelope passes, lowering fences, and modifying fences for antelope or mule deer, are currently covered by BLM regulations and fence standards. Grazing allottees in compliance with those regulations and standards would not be affected.

OIL AND GAS

During the 20-year life of the plan, surface disturbance from oil and gas operations would result in a loss of approximately 1227 AUMs (0.37 percent of current annual permitted grazing) of available forage in the Roswell Resource Area and approximately 7,661 AUMs (3.54 percent of the current annual permitted grazing) in the Carlsbad Resource Area. These numbers are relatively insignificant over the entire Roswell District. However, in heavily developed oil fields some livestock reductions may be needed to balance grazing use with available forage.

Geophysical exploration and the construction of oil or gas well drilling sites and roads may disturb established vegetation study transects that are an integral part of the BLM's rangeland monitoring. This conflict can be mitigated by avoidance when planning exploration projects or oil and gas developments.

LIVESTOCK GRAZING MANAGEMENT

Construction of range improvements, such as pipelines and fences, would cause a small, short-term loss of forage. Vegetation at water trough and reservoir locations would remain disturbed in small (1 to 2 acres per site), localized areas over the long-term. Benefits of project construction would include increasing the ease of managing livestock, reducing stress on livestock and wildlife by improving water source distribution, and encouraging better utilization patterns of available forage. The amount and type of construction would determine the amount of impact.

The construction of raptor nesting platforms in the Macho WHA would favor populations of resident raptors, such as golden eagles, and migratory raptors, such as bald eagles. Impacts would be greatest during the lambing seasons of sheep and goats. Most operators currently try to arrange for the lambing season to occur after the migrating bald eagles have moved through the area. Predation of young livestock may increase if locations for proposed nesting platforms are not carefully considered. Losses to raptors do occur, but at low levels, according to Animal Damage Control reports.

Management of the Macho Habitat Management Area (HMA) could affect the stocking rate for sheep on allotments in the HMA. Sheep allotments in the WHA that currently support antelope and meet the transplant criteria would have a stocking rate of an average of 50 head per section per allotment. Restricting numbers to specified levels could limit options in developing grazing systems, since rotational grazing involves increasing numbers in some pastures, while resting others. Limiting sheep numbers could cause some allottees to reduce the size of sheep herds on some allotments and seek pasture elsewhere. If a change in the class of livestock was necessitated by the sheep limitation, changes in range improvements, such as fences, could follow.

Constructing exclosures or barriers to protect wildlife habitat or special habitat features could affect livestock grazing in some cases, depending on the locations of the structures, the acreage each structure precludes from grazing, and the number of structures within an allotment. Exclosures or barriers could disrupt the layout of

pastures within an allotment, disrupt established livestock movement patterns which would alter utilization patterns, or make livestock gathering and pasture rotations difficult. A secondary benefit in some cases would be that data on plant communities could be gathered to show the differences between vegetation and use inside and outside an exclosure. The number of structures constructed over the life of the plan is likely to be small, because of the cost of labor and materials (as much as $4,000 a mile) and continuing maintenance cost would limit the use of these structures to only the most important sites or areas. Thus, the impacts from the use of exclosures or barriers would not be significant in terms of the entire resource area. Exclosures or barriers could, however, be significant to a single allotment, if there were many exclosures in a small allotment. In most cases, the acreage enclosed by a structure would not be enough to require adjustment of the livestock allocated to the allotment.

VEGETATION MANAGEMENT

The Proposed Plan's 45 percent forage utilization level would maintain current livestock stocking levels.

The magnitude of impacts from vegetative treatments would vary with the number of acres treated and with the method of treatment. Deferring grazing after a vegetative treatment would affect livestock by decreasing the forage immediately available, but this short-term impact would be offset by increased vegetative vigor, seed production, and forage production.

Vegetative treatments may necessitate a change in some grazing systems or in livestock numbers, in some cases. Treatments may result in temporary adjustments in livestock numbers because livestock have to be relocated to different areas to allow the treated area to rest. In some instances, such as in lesser prairie chicken habitat or sand dune lizard habitat, livestock numbers may have to be reduced temporarily or permanently to ensure the viability of wildlife habitat and to reduce conflicts between livestock grazing and maintenance of habitat. Both long-term temporary and permanent reductions would affect the economics of affected allotments.

In treated areas, vegetation composition would change to a lower percentage of brush and a higher percentage of grasses and forbs. The ban on the use of herbicides proposed under Alternative B would affect livestock grazing opportunities because vegetation composition would not move toward a prevalence of grasses and forbs. Saltcedar control would improve opportunities for livestock grazing because species such as sacaton would flourish, resulting in improved range condition.

Chemical treatments result in higher amounts of quality forage in shorter periods of time, when compared with other treatment methods. Under Alternative B, excluding herbicide use and relying on other treatment methods would result in higher treatment costs and more physical damage to all vegetation, instead of just to target species. Other treatment methods would cause slower responses from vegetation in meeting desired plant community objectives, if the objectives can be met at all. Brush species would continue to increase, which would cause a decrease in herbaceous forage available to livestock.

For vegetation management, exclosures are used to protect sites within a plant community that have special characteristics. The vegetation within an exclosures provides important baseline data used in documenting changes in the surrounding area from grazing and other uses. A secondary benefit of exclosures constructed for data gathering purposes is the protection of small areas of wildlife habitat from livestock grazing and other uses. The consequences of constructing exclosures for vegetation management would be the same as the previously described impacts of exclosures used to protect wildlife habitat. Again, it is likely that few exclosures would be constructed, given the costs of construction and maintenance.

OUTDOOR RECREATION MANAGEMENT

Recreation use of the Mescalero Sands North Dune, Haystack Mountain and Dunahoo Hills OHV areas would cause harassment of livestock and damage vegetative resources. Damage and vandalism to range improvements currently

occurs in developed OHV areas and is expected to continue. A benefit of designated OHV areas is that the majority of OHV users are confined to specific areas. This would concentrate damage to vegetation into a confined area and reduce the effects over the remainder of the resource area. Damage to vegetation and disturbance of livestock are related to the amount of acreage involved in OHV areas.

WATERSHED MANAGEMENT

Many projects, such as erosion control structures, vegetative treatments, or water developments for watershed or wildlife, generally benefit livestock. Watershed projects that reduce soil erosion would increase forage availability in the long term. Water and forage quality may improve for livestock under riparian pasture development.

Watershed management practices such as controlling livestock number, season of use changes, or short-duration livestock grazing, would be a change from typical existing management. New management practices would create a short-term impact on allotment management until changes were fully incorporated into allotments. Excluding livestock or reducing stocking rates also would have an adverse impact on livestock operators if the operators were forced to reduce the size of their livestock operations, locate pasture elsewhere, or increase stocking in other pastures. These changes may be temporary and produce a short-term economic hardship. However, additional forage, if available to livestock, would be a long-term benefit.

When treated areas are closed for reseeding, livestock grazing would be adversely affected by the decreased available forage. When areas are re-opened to livestock use, livestock would benefit from increased available forage, and, possibly, better nutritional value of the forage.

If exclosures proposed for water source protection are constructed, they could limit water sources for livestock. A reduction in the number of watering locations for livestock would alter grazing patterns and could lead to heavier forage utilization around remaining water sources. These impacts could be mitigated by constructing or developing other watering locations. Exclosures could disrupt the layout of pastures in an allotment, may disturb normal livestock movement, which could alter utilization patterns, and make livestock gathering and pasture rotation difficult. Because the number of exclosures constructed is likely to be small, these impacts would not be significant.

On the Pecos River, Salado Creek, and the Rio Bonito, proposed riparian pastures with controlled grazing practices would affect current livestock management practices, but would benefit riparian areas. Short-duration livestock grazing and limited numbers associated with the riparian pastures would be a change from the majority of existing management. This management would cause short-term impacts to allottees until rotational schemes were fully incorporated into allotments. Positive benefits to grazing would occur as forage species proliferate in the riparian pastures.

FIRE MANAGEMENT

Negative impacts of fire on livestock grazing would be short term. The impacts are the loss of currently available forage for livestock and wildlife, and possible damage to range improvement projects, which would create expense and reduce flexibility for operators. A short-term loss of vegetative cover and forage availability would be expected with all fires. However, the length of time until sufficient forage is available for grazing varies with the treatment. Deferment from grazing varies from one month after a sacaton burn to two or more growing seasons in upland areas burned to reduce brush species.

Benefits of fire include the increased amount of forage available, increased palatability and nutritional value of the forage, decreased amounts of decadent or standing dead vegetation, decreased amounts of encroaching brush or concentrated brush unusable for cover, and increased management ease of the livestock animals. A long-term change in the type of vegetation is expected in areas where fire results in the reduction of brush species.

Occasionally, grazing is deferred up to one growing season prior to a prescribed burn to

allow fine fuel loads to increase. Impacts from prescribed fire would be similar to those from wildfire. Failure to employ prescribed fire treatments could result in the use of less economical, efficient or effective means of treatment, or no treatment. In some areas, allowing the buildup of decadent vegetation would promote conditions for wildfire to occur, and could result in extensive forage loss.

Impacts from wildfire suppression would vary with the location of the fire. Full suppression of wildfires would benefit livestock grazing in the short term by saving as much forage as possible. The conditional level of fire suppression would potentially cause more forage to be lost over the short-term than full suppression.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Overflow Wetlands ACEC

The Proposed Plan calls for the adjustment of as many as 674 AUMs of grazing use on Allotments 65060, 65062, and 65069. Restricting the season of grazing to the period of March 1 through June 30 in combination with an inability to allow grazing due to goldenrod toxicity from fall to spring would limit actual grazing use from April through June 30. This would result in either a loss of the animal units normally attached to this area; an increase in the stocking rates throughout the remainder of the allotment; or maintenance of the number of animal unit months by intensively grazing the area for the shortened duration. Lowering livestock numbers would either decrease the herd size or require allottees to locate additional pasture. These impacts would cause economic hardship. Benefits of limiting use include protecting riparian, aquatic and T&E species habitats, and enhancing plant communities.

North Pecos River ACEC

Grazing on Allotments 64038, 64538, and 64039 would be most affected by possible grazing use adjustments, because they contain the majority of acreage included in the ACEC. As many as 756 AUMs could be affected, if all adjustments are made. Allotment 65001 contains limited acreage in the ACEC and would be minimally affected.

Mescalero Sands ACEC

Management of the proposed Mescalero Sands ACEC, which includes portions of four grazing allotments, would affect livestock grazing. The existing grazing exclusion on 1,838 acres would be eliminated; no grazing preference would be established for this area. Management could reduce licensed grazing by as many as 144 AUMs.

A ban on new range improvement projects could affect livestock distribution patterns identified in management plans and not allow for vegetation manipulation projects, such as brush control or prescribed fire. Rangeland improvement tools would be limited to changes in season of use and manipulation of livestock numbers.

Fort Stanton ACEC

Fort Stanton has been used as a demonstration area since 1991, to illustrate the compatibility of livestock grazing and other resource management operations associated with riparian system management, recreation opportunities, and wildlife enhancement. Livestock grazing has been authorized under the terms of a vegetation sale contract as a method of treating vegetation. A livestock grazing preference has not been established. Because of the way livestock grazing has been employed at Fort Stanton, the increase, decrease or elimination of livestock use would not necessarily create negative economic impacts. The grazing use at Fort Stanton can be viewed as an "add-on" to the operation of the person or persons who are awarded the contract for grazing. The contract is a supplement that potentially provides positive economic benefits to the holder of the contract.

Fencing to develop riparian pastures, although creating a short-term adverse impact to livestock grazing, would create more diverse management patterns of use.

Designation of Ft. Stanton as a special recreation management area may attract more recreation users. Individually, the recreation

facilities proposed do not represent significant impacts to livestock grazing. Collectively, proposed and existing recreation sites would affect livestock grazing. The addition of camping areas, trails for mountain bikes, OHV use, horses and hiking would attract more people and represent greater potential for conflicts between livestock grazing and recreation users in terms of vandalized range improvements or harassment of livestock.

Roswell Cave Complex ACEC

The impacts to livestock grazing from designation of this ACEC are the same as those addressed in the general discussion of impacts to livestock.

The Roswell Cave Complex ACEC includes portions of 12 grazing allotments, which would be affected by proposed ACEC management. The most significant effect would be the construction of exclosures around cave entrances in the ACEC. The largest single exclosure would be approximately 40 acres, while most exclosures would not exceed one acre in size. The acreage in the ACEC affected by exclosures would be about 1,000 acres. An estimated 18 AUs (216 AUMs) could be affected by management of the ACEC. This is approximately one tenth of one percent of the AUMs in the resource area.

Areas in which vegetation is totally removed, such as mineral material pits, well sites for oil and gas activities, or access roads, would result in intense localized impacts to vegetation during active use. The magnitude of impacts to vegetation would be directly proportionate to the number of access roads and well sites constructed, the amount of acreage affected, and the length of time the area is disturbed. Typically, vegetation would be totally removed from a site during initial construction activities, and "invader" species such as broom snakeweed and three-awn grasses, could become sparsely established during use of the site. Once development ceases and the site is no longer being used, disturbed areas would be recontoured, ripped and reseeded. Vegetation and ground cover would be re-established at the site but would not be of the same makeup as the surrounding area.

Construction of improvements, such as pipelines and fences would cause a disturbance to vegetation along the route by direct removal and crushing. Major rights-of-way would result in the greatest amount of vegetation and soil disturbance. Generally, vegetation would re-establish along these routes within two to three years depending on soil type, degree of disturbance and precipitation. The time needed for revegetation could be reduced by reseeding with the optimum seed mix for that particular range site and by limiting repeated vehicular travel along the route.

LIVESTOCK MANAGEMENT

Vegetation and soils at livestock water troughs and reservoirs would remain highly disturbed over the long-term. Approximately one to two acres of vegetation would be sacrificed around each new water facility by trampling. Livestock trailing to the water facility would also result in some loss of vegetation.

Excluding livestock or reducing stocking rates could benefit vegetation in the short term, in those areas proposed for livestock grazing restrictions. Eliminating livestock grazing pressure would allow plants to regain vigor and would increase forage production in the short term. Changing livestock grazing management systems could benefit vegetation by altering grazing patterns, resulting in the maintenance of plant vigor and increased forage production. An overall increase in the density of vegetation could occur, followed by a subsequent increase in vegetation litter. In the long term, vegetative production would decline slightly as litter builds up and plants become decadent. Increased litter would indirectly benefit vegetation by slowing precipitation runoff and holding moisture on the ground for longer periods. Properly managed grazing would generally be beneficial because it stimulates plant growth in healthy vegetative communities.

Sheep stocking rate restrictions in the Macho Wildlife Habitat Area, coupled with adequate precipitation when required for plant growth, would increase forb production and diversity.

Deferring grazing after herbicide treatment will permit desired vegetation to more successfully respond to the treatment.

VEGETATION MANAGEMENT

Aerial application of herbicides would result in vegetation being treated more effectively and efficiently, compared with other application methods. Impacts of chemical vegetative treatment proposed in these three alternatives would vary in magnitude according to the amount of acreage treated.

A wide range of vegetative manipulation methods would be available for meeting the desired plant community and could facilitate the acceleration of the vegetative trend toward the goals of the DPC. Within treatment areas, vegetation composition would change to a lower percentage of undesirable brush and a higher percentage of grasses, forbs and desirable woody species.

Saltcedar stands are generally monotypic. Treatment, either by burning or herbicide application, would aid in increasing the biodiversity of the riparian areas invaded by salt

cedar. Salt cedar control would allow native species, such as sacaton, willows or cottonwood, to become re-established. Salt cedar control would result in the long-term improvement of vegetative and watershed conditions.

Planting with native species considered highly desirable, in terms of ecological range site goals or desired plant community, could be instrumental in achieving those goals. Planting of preferred species would accelerate the rehabilitation of areas in poor condition and could limit the amount of invasive, undesirable vegetation, resulting in higher quality vegetation and reducing the amount of time the soils are susceptible to erosion.

The BLM's programmatic environmental impact statement entitled *The Environmental Impact Statement for Vegetation Treatment on BLM Lands in Thirteen Western States* provides detail on the impacts of different types of vegetation treatments (chemical, biological, fire, and mechanical) as well as implementation methods for those treatments.

OUTDOOR RECREATION MANAGEMENT

Adverse impacts to vegetation at recreation sites, such as trampling or unauthorized removal, could occur when recreationists fail to remain on established trails, or leave designated use areas. The magnitude of impacts would depend on the size and number of recreation sites, the intensity of public use, and the sensitivity of the associated vegetative community, but should not be substantial.

Damages to vegetation from OHV use are related to the amount of acreage involved and intensity of OHV use areas. The use of OHVs causes direct physical damage to vegetation by crushing and breaking. Indirect damage to vegetation results from increased soil erosion and soil compaction by limiting a plant's ability to retain a strong root system in soil. These impacts would be widespread and more intense in those areas designated as open for OHV use. A major benefit of restricting OHV use to designated "open" areas is that OHV damage to vegetation is confined to site-specific areas, and the effects on vegetation over the remainder of the resource area are reduced.

WATERSHED MANAGEMENT

Watershed projects that reduce soil erosion would increase vegetative production and ground cover over the long term. Water and vegetative quality would improve under riparian pasture development.

FIRE MANAGEMENT

The use of prescribed fire would cause a short-term loss of vegetative cover and availability. A long-term change in the type of vegetation is expected in areas where prescribed fire is used for the reduction of brush species. Benefits would include: increased nutrient cycling; an increase in the amount of vegetation; increased quality, vigor, palatability and nutritional value of the vegetation; decreased amounts of decadent or standing dead vegetation; and decreased amounts of encroaching brush or concentrated brush unusable for cover.

Impacts from wildfire suppression would vary with the location of the fire. Full suppression of wildfire in designated areas would protect important or unique plant communities such as riparian areas. The activities from conditional suppression would also protect special status plant species and habitat. Full or conditional fire suppression could limit the beneficial aspects of fire by "protecting" vegetation with lower quality and palatability, or allow for an increase in woody species in relation to grass species. The conditional level of fire suppression would potentially cause more vegetation to be lost over the short-term than full suppression.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Overflow Wetlands ACEC

Impacts to vegetation from recreation use, exclusion or restriction of livestock grazing, and vegetation treatments are the same as those discussed previously.

Impacts to vegetation from OHV use in this ACEC would be the same as those discussed above. The Proposed Plan would reduce impacts from OHVs and benefit vegetation by closing 1,040 acres to OHV use and limiting use on 2,100 acres to designated roads and trails.

The acquisition of additional wetland/riparian areas would expand and protect the current area of wetland vegetation.

The exclusion or limitation of mineral development, major rights-of-ways and oil and gas activity would have a positive effect on vegetation by reducing surface disturbance. Riparian-wetland vegetation would be protected and maintained.

Excluding the use of chemical retardant and heavy equipment during wildfire suppression may result in a higher loss of vegetation from fire than if those suppression techniques were used. However, not using those techniques would protect water, soils and visual resources.

North Pecos River ACEC

Refer to the general discussion of impacts to vegetation for impacts from reduction in livestock numbers, and from salt cedar control.

Impacts to vegetation from OHV use in this area would be the same as those identified previously. The Proposed Plan would limit OHV use to designated roads and trails.

The exclusion of mineral development, including oil and gas leasing, and avoidance or exclusion of major rights-of-way would benefit vegetation, as discussed previously.

Mescalero Sands ACEC

Impacts to vegetation from OHV use in this area would be the same as those identified previously. The Proposed Plan would close 2,478 acres to OHV use and limit use on the remainder of the ACEC to designated roads and trails.

The impacts to vegetation from other proposed activities are the same as identified previously for those activities.

Fort Stanton ACEC

The exclusion or limitation of mineral development, major rights-of-way and oil and gas activity would benefit vegetation by reducing or eliminating surface disturbance.

Maintenance of range improvements, such as watering facilities and fences, would benefit vegetation by enhancing the management of livestock and maintaining level forage utilization patterns.

Impacts to vegetation from OHV use in this ACEC would be the same as those identified previously. The Proposed Plan would limit OHV use.

The proposed exclusion or limitation of grazing in riparian areas, highly erodible areas, cave entrances, campgrounds, day use areas, archeological sites, and trails would benefit vegetation on about 1,550 acres by removing grazing use. Limits on grazing use in these areas could alter utilization patterns and increase grazing pressure on the vegetation adjacent to these areas.

Further discussion of vegetative treatments, maintenance of range improvements, prescribed burns and firewood sales, OHV impacts, mineral development, and possible exclusion or limitation of grazing in certain areas is in the general discussion of impacts to vegetation.

Roswell Cave Complex ACEC

Impacts to vegetation from OHV use in this ACEC would be the same as those identified previously. The Proposed Plan would benefit vegetation by closing up to 500 acres to OHV use. The use of OHVs in the remainder of the ACEC would be limited to designated roads and trails.

The impacts to vegetation from other proposed activities are the same as identified previously for those activities.

Direct impacts to cultural resources result from surface disturbing activities. Projects such as BLM-initiated fences, water pipelines and wildlife waters, and privately sponsored projects such as mining, oil and gas development, and construction in rights-of-way are common causes of surface disturbance and would affect cultural resources.

OIL AND GAS

Currently, there is approximately ten times the amount of oil and gas initiated surface disturbance in the Carlsbad Resource Area (CRA) as in the Roswell Resource Area (RRA). The total amount of surface disturbance to date caused by oil and gas activities in the RRA amounts to about 7,000 acres. The CRA has experienced about 32,000 acres of surface disturbance. It is difficult to estimate the past amount of cumulative negative impacts to cultural resources as a result of oil and gas facility construction. The main causes of damage to cultural resources have been primarily illegal artifact collecting and, to a lesser degree, inadvertent and illegal trespass. These impacts are particularly severe in the CRA. With sustained high levels of oil and gas development, and the attendant surface disturbance and increased access to public lands, the rate of loss of cultural resources has reached the point where existing practices are not adequately mitigating the loss.

Any surface disturbing activity has the potential to negatively affect cultural resources. The movement and loss of artifacts because of soil erosion is an indirect negative impact associated with project construction and other surface disturbing activities. Oil and gas development is the largest single surface disturbing activity in both the RRA and CRA and, therefore, causes a majority of the impacts. It is also likely that accidental damage from project construction destroys buried cultural resources, even though nothing is visible during surface inventories. There are two or three known instances per year of significant recorded sites being damaged during construction in the Roswell District by contractors failing to follow protective stipulations. Most negative impacts to cultural resources are permanent and irreversible. Cumulative impacts to cultural resources are difficult to estimate because for every known site that has been unexpectedly impacted, there are likely more damaged sites that are not discovered. Illegal artifact collecting increases as development increases and remains a significant problem, but the degree of impact is unknown.

LANDS AND REALTY MANAGEMENT

In cases of proposed land transfers, eligible sites are either retained and protected with adequate buffer acreage by the BLM or are archaeologically treated before transfer. Thus, impacts to cultural resources occur only at the treated sites. Studying archeological and historic sites provides much needed information about the past, which is a benefit, but the process usually damages or destroys the sites at the same time. There is a slight possibility that one or two sites would be studied each year, depending on the availability of funding and manpower.

The negative impacts associated with construction in rights-of-way are mostly limited to illegal artifact collecting resulting from increased access. Nearly all projects are rerouted, when necessary, to avoid cultural sites. More access to an area usually brings increased public use, causing an increase in artifact collecting. The exception to avoidance of cultural sites is when it is not feasible to reroute large power lines. As a result, about one site is studied every two years in the Roswell District, because of power line construction.

RANGE MANAGEMENT

Significant cultural resources are usually avoided during the construction of range improvements such as fences, water tanks and pipelines. Indirect impacts, such as increased erosion from the construction of improvements, are minimal.

Cattle trailing along fence lines can damage archeological sites, but the degree of damage by livestock is not known.

CULTURAL AND PALEONTOLOGICAL RESOURCE MANAGEMENT

The nominations of Haystack Butte and Cocklebur Lakes as National Register Archeological Districts would better protect the cultural values in those areas from surface disturbing activities, than current management. The various combinations of mineral leasing or entry closures, restrictions on surface use, avoidance or exclusion of rights-of-way, and limitation on OHV use in these areas would substantially reduce the likelihood of impacts to cultural resources.

Interpreting the Garnsey Bison Kill Site would produce both positive and negative impacts. Benefits would include the learning experiences created by interpreting the site and stabilizing erosion at the site. Negative Impacts would include damage to part of the site from excavation work and the possibility of increased illegal artifact collecting due to visitation.

An additional opportunity for interpreting archeology would be Las Chosas, located on Tract 5 of the proposed Rio Bonito exchange. The impacts of developing this site for interpretation would be the same as those for the Garnsey Bison Kill Site. Since the BLM would not acquiring the mineral rights on this parcel, protection from mineral development would not be possible, and damage or loss of cultural resources could occur.

For sites other than those specifically mentioned, the BLM would interpret archeological or historic sites at the rate of only one every three or more years. This means very few sites would be affected by work done to develop a site for public interpretation.

RECREATION MANAGEMENT

In the Roswell Resource Area, proposed increases in facility-based and dispersed recreational use would increase visitation and intensify use. Illegal artifact collecting and damage to cultural resources from increased use would result. Designations of National Register Archeological Districts and subsequent intensive management at Haystack Butte and Cocklebur Lakes would reduce the possibility of damage to cultural resources by surface disturbance. Visitor use would be controlled and illegal artifact collecting would be reduced.

FIRE MANAGEMENT

The use of prescribed fire as a management tool and the suppression of wildfires can affect cultural resources by burning any combustible cultural materials and changing (heat treating) the characteristics of lithic materials. Building fire line by hand or with heavy equipment can damage cultural resources. Even so, the use of prescribed fire and the suppression of wildfire is believed to have had a minor impact overall on cultural resources.

MAROON CLIFFS ARCHEOLOGICAL DISTRICT

In the Carlsbad Resource Area, the unique cultural values in the Maroon Cliffs Archeological District have minimum protection from the effects of future oil and gas development. Hydrocarbon development in the Archeological District would adversely affect the research values for which it was established to highlight and protect. The Proposed Plan would offer increased protection of the cultural values in the Archeological District. The District would be increased in size from 11,783 acres to 17,720 acres. Under the Proposed Plan, 10,880 acres would be closed to future oil and gas leasing. The remaining 6,840 acres would be designated open to leasing with no surface occupancy. In addition, strict interim conditions of approval would be applied to proposed developments within the entire area, to mitigate the direct, indirect, and cumulative impacts that would result from proposed development.

IMPACTS OF AREAS OF ENVIRONMENTAL CONCERN

Negative impacts to cultural resources from actions occurring in the proposed ACECs would

be similar to those occurring on public lands not in the ACECs. These impacts primarily would be illegal artifact collecting, since surface disturbing activities would be restricted and resulting impacts from that disturbance would be minimal.

Overflow Wetlands ACEC

Prehistoric sites are thought to be buried under several feet of sediment in most of this proposed ACEC. Projects causing shallow surface disturbances probably will not impact these sites. There may be historic sites and paleontological specimens present. Cultural and paleontological values would be best protected by limiting land use. Protection of cultural values would be provided by excluding major rights-of-way and closing acreage to the disposal of salable, solid leasable and locatable minerals. Oil and gas leasing with no surface occupancy would be allowed.

North Pecos River ACEC

Negligible impacts to prehistoric sites are expected in approximately half of this proposed ACEC because it is not likely to contain *in situ* prehistoric sites due to periodic sedimentation and erosion caused by the Pecos River. There could be some historic sites and paleontological specimens in the ACEC whose integrity would be preserved longer by limiting land use. Cultural and paleontological resources would be protected by placing limitations on surface disturbing activities, such as excluding rights-of-way in some areas and closing the most acres to disposal of salable, solid leasable and locatable minerals. Limiting surface disturbance limits impacts. Oil and gas leasing would be either precluded or leasing with no surface occupancy would be allowed.

Mescalero Sands ACEC

Cultural resources would be protected by applying restrictions on surface disturbance. The entire ACEC would be completely closed to oil and gas leasing. About 2,438 acres would be closed to OHV use and OHV use in the remainder of the ACEC would be limited to designated roads and trails. Major rights-of-way would be excluded from the ACEC.

Fort Stanton ACEC

Limiting OHV use to designated roads and trails affords protection to cultural resources. Protection for cultural resources would be provided by excluding major rights-of-way. The intensive management of Feather Cave and Lower Stanton Ruin would benefit the public by providing educational experiences. At the same time, vandalism and illegal artifact collecting could increase because of the visibility of the sites. Additionally, excavation and reconstruction work at Lower Stanton Ruin could damage cultural values.

An administrative site at Fort Stanton would benefit cultural resources because the presence of employees would discourage illegal artifact collecting. The building of recreational facilities would be a negative impact to cultural resources because increased visitation could increase illegal artifact collecting. Mineral material disposals would be possible from nearly the entire ACEC, possibly impacting archeological sites.

Roswell Cave Complex ACEC

Negative impacts to cultural resources would, for the most part, continue to come from illegal artifact collecting. Limits on visitation would reduce the possibility of illegal artifact collecting.

OIL AND GAS MANAGEMENT

Increased activity in expanding oil and gas fields would reduce the visual quality of the natural landscape, and would negatively affect semi-primitive recreation opportunities and the quality of recreational experiences in the Roswell District. Visual impacts would result from the presence of structures and equipment, both concentrated and dispersed. Scenic quality on approximately 60,000 acres of land in the Roswell Resource Area and approximately 370,000 acres in the Carlsbad Resource Area would be affected over the next twenty years. Although these impacts would occur mostly in Class III and IV VRM zones, impacts would still be mitigated to some extent by painting, requiring low profile facilities, restricting the amount of surface disturbance, and moving facilities or sites to less visually sensitive locations.

The no surface occupancy restrictions applied to oil and gas activities in state parks and recreation areas throughout the district would help to maintain those areas' visual quality and aesthetics for boating, fishing, hunting, and other recreational pursuits. Other benefits would include preservation of wildlife habitat and water quality.

In the Carlsbad Resource Area, oil and gas activities would reduce semi-primitive nonmotorized and motorized recreational opportunities. In the Roswell Resource Area, semi-primitive nonmotorized and roaded natural recreational opportunities would be reduced.

Construction of oil and gas roads and pipelines would improve access; recreationists would not necessarily benefit. Temporary losses of certain kinds of recreational opportunity and long-term loss of visual quality are expected in areas of mineral development, especially oil and gas development.

The no surface occupancy designations and closures to oil and gas leasing would benefit both semi-primitive nonmotorized and roaded natural recreational opportunities. Additionally, in the Carlsbad Resource Area, semi-primitive motorized recreational opportunities would be preserved. Other benefits would include fewer ground-disturbing activities, preservation of wildlife habitat and fewer above-ground structures and facilities.

Drilling, completion, production, and abandonment of wells could increase negative impacts on both known and undiscovered caves. Impacts include contamination of cave ecosystems from drilling fluids, oil and gas leakage, groundwater contamination, and surface disturbance from heavy equipment. The potential for drilling fluids, cement, hydrocarbons, and chemicals to enter cave ecosystems increases with each well drilled. Long-term impacts of leaky casings caused by corroded pipes or poor cementing could allow hydrocarbons to leak into cave systems, threatening stability of cave ecosystems. Human safety could also be affected, resulting in serious injury or death from explosions or asphyxiation. Irreversible and irretrievable impacts to cave ecosystems and other natural and cultural resources associated with caves or karst could result.

Protection of scenic quality would be afforded by the use of no surface occupancy requirements. Visual intrusions associated with oil and gas development could impair the scenic quality of areas under development, until individual wells or fields are reclaimed.

OTHER MINERALS MANAGEMENT

Maintenance of the existing mining claim withdrawals would continue to benefit recreational opportunities and caves by protecting special areas from visual and ground disturbing activities.

Extracting mineral materials near caves or in karst areas could have adverse effects on cave and karst resources. Increased soil erosion and siltation could prevent normal water infiltration into cave systems and adversely alter

speleothem growth. Additionally, excessive siltation and sediment loads in underground streams and pools would have highly negative impacts on aquatic wildlife. Mining activities could further affect both water and air movement patterns and quality.

Air and water are major factors affecting cave growth and development, passage enlargement and speleothem growth. Any microflora or fauna within caves have evolved because of the balance between water and air. Mining activities could open new air passages to the surface, which would influence or alter normal cave temperatures and change the flow of air or water, or both, through caves, changing cave microclimates. The change from a constant microclimate could affect both the wildlife and mineral deposition in caves.

Recreational cave use could decrease and possibly become more hazardous, depending upon the degree to which air or water movements are altered, the amount of surface blasting, and other structural modifications that may occur. A cave could be completely destroyed if mining operations removed rock in which cave passages were formed.

Locating mineral material extraction sites adjacent to heavily travelled roads or within view of Special Recreation Management Areas would affect recreation-user experiences by decreasing visual quality, and by increasing heavy truck traffic, noise, dust and congestion. Lands closed or restricted from mineral leasing or disposal would provide increased protection to visual resources.

LANDS AND REALTY MANAGEMENT

Rights-of-way for roads, pipelines, and power transmission lines would detract from visual resources and back-country recreational opportunities and experiences. Impacts include direct loss of visual quality and displacement of watchable wildlife in construction areas. Moderate, long-term impacts could result in the decrease of solitude and recreational experiences in semi-primitive non-motorized and semi-primitive motorized areas by increasing access to areas previously inaccessible by vehicle. The increased accessibility would also provide greater opportunities for motorized recreational use.

Rights-of-way avoidance and exclusion areas would provide increased protection to visual resources. Rights-of-way avoidance and exclusion areas would benefit recreational opportunities by reducing the proliferation of cross-country facilities and resulting ground disturbance and visual intrusions. Vegetation clearing, soil disturbance, and visual intrusions generally associated with major rights-of-way would detract from recreational opportunities. Increased access could benefit recreationists pursuing motorized vehicle activities, but negatively impact those who prefer solitude. Long-term impacts from rights-of-way would include reduced visual quality of the natural landscape, as seen from both the ground and the air.

The acquisition of inholdings in the Little Black Peak and Carrizozo Lava Flow wilderness study areas would enhance wilderness characteristics and provide improved recreational opportunities. Acquisition would eliminate incompatible inholding uses, reduce the likelihood of conflicts with landowners, and expand the area available for recreation. No impacts are expected in the WSAs from mining or mineral leasing.

An additional 1,000 acres could be acquired in the Rio Bonito Valley, further enhancing recreational opportunities such as hiking, horseback riding, fishing, camping, nature viewing and photography. New facilities along the Rio Bonito, such as river-side trails, interpretive exhibits and a full-service campground, could be provided on these lands. Impacts from recreation primarily would be from encouraging and concentrating use where none now exists. Impacts of visitor use, such as litter, soil compaction or erosion, vegetation loss, and scaring wildlife, would be controlled and repaired, when possible. Because those impacts do not now occur, they would be more obvious than similar impacts at an existing recreation site. Visitor use would be expected to increase annually as facilities are developed or improved.

Consolidation of land ownership through exchanges and acquisitions resource area-wide would provide increased opportunities over current management by increasing the availability of contiguous public land for recreation use.

The disposal of as many as 150,000 acres would not have a major impact on recreational opportunities, because most lands slated for disposal are isolated tracts, with no physical or legal access for recreationists. Lands with excellent recreational or caving opportunities would be retained in federal ownership.

LIVESTOCK MANAGEMENT

Livestock grazing in or near recreation sites, and riparian areas associated with those sites, would affect the quality of recreation experiences. Soil compaction and vegetation damage would continue to result from grazing in those areas. Visitor health and safety problems, such as manure and flies in campsites, movement of cattle through tented areas at night, and bedding of cattle in campgrounds, would continue to detract from quality recreational experiences.

The evidence or presence of livestock can negatively affect visitors who desire solitude, unspoiled landscape views or trail hikes without seeing signs of livestock. Controlled grazing can benefit wildlife-based recreation by dispersing water sources and allowing increased habitat diversity where rotational grazing systems are used.

OUTDOOR RECREATION MANAGEMENT

The continued development of the Valley of Fires Recreation Area as a full-service campground would contribute to meeting future recreation needs. As more recreation facilities are provided and visitation increases, impacts from public use are expected to increase. Where concentrations of recreationists are encouraged, opportunities for damage would increase, affecting facility condition and soil and vegetation health. However, because these impacts would be concentrated or channelized, corrective measures could be more easily applied.

The development of the Billy the Kid Recreation Site would benefit fishermen and other day-use recreationists who value riparian settings or enjoy viewing wildlife. Adequate site management and vandalism of facilities would be of concern due to the distance of the site from the nearest BLM office.

Visitors to the Garnsey Bison Kill Site would benefit from interpretation of cultural and paleontological values at the site. Development of facilities and interpretive sites would be more intensive. Encouraging public use where none presently exists would create negative impacts in the form of litter, soil compaction, erosion (especially of arroyo banks), vegetation damage, vandalism, and potential loss of archeological or paleontological features.

The potential development of the alleged UFO crash site could benefit UFO enthusiasts and those who have developed businesses associated with the interest in UFOs. Creation of visitor use where none exists would produce impacts such as litter, soil erosion or compaction, vegetation damage and vandalism to any facilities and informal development of roads and trails.

Visual resources could be negatively affected by almost any activity allowed on public lands. In most cases the intensity of impact would be small, would occur in Class III and IV VRM zones, and would not be mitigated. However, in the oil and gas and mining industries the visual impacts could be great.

Cumulative impacts to visual resources in the Roswell District would result primarily from permitted surface disturbing activities such as roads, fences, buildings and facilities, pipelines, power lines, well pads, mining activities, pits and dams. Cumulative impacts of large numbers of unmitigated visual intrusions concentrated in Class II and III VRM zones could threaten visual quality and downgrade VRM classifications. No irreversible or irretrievable effects to resources are anticipated, although impacts to the landscape could last for decades. In all

situations where visual resources are affected, impacts could be mitigated by design modifications, painting of permanent surface facilities and equipment, or other practices, such as surface reclamation along utility corridors.

The Proposed Plan would protect resources and values, such as fragile archaeological and paleontological sites, trails, wilderness study areas, recreation areas, and caves, from OHV impacts. Closures or use limitations on OHV use would reduce opportunities for recreationists who prefer to drive their vehicles off-road.

Areas at Mescalero Sands and Haystack Mountain designated specifically for OHVs would concentrate use, resulting in greater impacts to soil and vegetation. However, by channeling use to designated OHV areas, abuse and negative impacts to adjacent lands and resources should decrease.

Easement acquisition at Haystack Mountain would benefit OHV users and reduce impacts to adjacent landowners by providing adequate access, opening a larger area for ATV use, and clarifying designated use areas. Limitations on the size of OHVs would benefit ATV users by eliminating conflicts with dune buggies and large four-wheel drive vehicles. These alternatives would have a slight negative impact on motorcycle riders in terms of recreation experience quality, because they would have to share the area with ATVs.

Designation of the 640-acre Dunahoo Hills Area as an intensive use area for ATVs would provide an additional recreation area for off-highway vehicles. By designating this area, illegal OHV use adjacent to U.S. Highway 70 should decrease. The visual resources along this highway corridor would be less affected by OHVs than at present.

The intensive management of permitted caves and limited regulation of non-permitted caves could control or reduce vandalism. Unregulated use allows cavers the freedom to visit one or more of nearly 190 non-permitted caves anytime they wish.

Such use would have a negative impact on cave resources due to vandalism, littering, excessive group size and visitation, and removal of cave formations. Cumulative effects of unregulated visitor use in caves include negative impacts to bat populations (roost abandonment, colony disruption, T/E species destruction), biota and fragile cave formation destruction. If cave visitation continues to grow at the same rate as recent increases (about 7 percent annually), impacts such as bat roost abandonment, widespread vandalism and pollution could be severe.

The seasonal closure of Fort Stanton Cave from November 1 through April 15 annually would continue to benefit cave-adapted biota, especially wintering bat populations. This annual seasonal closure would have long-term benefits to bat populations because hibernacula would be protected from life-threatening human disturbances.

WILDLIFE HABITAT MANAGEMENT

Wildlife viewing and hunting opportunities would increase from more intensive management of habitat. Hunting quality would improve with implementation of HMPs. Wildlife and fish habitat enhancement projects would provide greater consumptive and non-consumptive recreation opportunities by improving habitat so that populations could be enlarged and their ranges expanded.

FIRE MANAGEMENT

Restrictions on fire suppression activities around caves and karst features would help protect caves by eliminating ground-disturbing activities within 200 meters around caves and karst features.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

The impacts of land management and use in proposed ACECs are generally the same as described above. Specific impacts to ACECs are discussed below.

Overflow Wetlands ACEC

About 3,000 acres would be excluded from

major rights-of-way, which would produce long-term benefits to recreation opportunities. Benefits could include protection from surface disturbing activities and human activity associated with maintaining right-of-way facilities. This would help maintain the outstanding wildlife viewing and hunting opportunities and the visual resources of the ACEC. Designating the remainder of public land in the ACEC as a rights-of-way avoidance area would reduce the possibility of rights-of-way crossing the ACEC. If rights-of-way were granted, construction would include the interruption of recreation opportunities. Creation of access along a right-of-way into undisturbed lands could cause the loss of waterfowl habitat, which would affect the quality of wildlife viewing and hunting in the area. Increased right-of-way access and maintenance could disturb the nesting and wintering waterfowl.

Acquisition of state and private land adjacent to, and in the ACEC, would contribute to long-term benefits for sportsmen and wildlife observers. Acquisition of lands would provide a buffer for wildlife hunting and viewing, and these recreation opportunities would be enhanced.

Developing the wetlands as a "showcase" for one of the prime wetlands in New Mexico would produce significant benefits for the public, by providing additional recreational opportunities and activities associated with wildlife interpretation and education. Visitors would gain a better understanding and knowledge of the wildlife that visit or live within the Wetlands. Unintentional vandalism and wildlife depredations should decrease with informational or interpretive exhibits and trails that explain the fragile and irreplaceable ecosystems of the wetlands.

North Pecos River ACEC

Recreation opportunities would be enhanced in areas where mining, mineral leasing and rights-of-way development are restricted. These opportunities would be enhanced by preservation of natural conditions and the lack of disrupting activities that could degrade the natural quality of outdoor experiences. Conversely, land and mineral activity restrictions would reduce the availability of new routes for motorized recreation. Acquiring easements to the Pecos River ACEC would resolve conflicts and enhance management in situations where roads that originate from county or state roads cross private and state inholdings. Acquiring lands and public access in the ACEC would increase recreational diversity and opportunity and disperse use over a larger area. Acquisitions would benefit hunters, fishermen, bird watchers, sightseers, nature photographers and hikers.

The development of fishing access points along the Pecos River would benefit fishermen. Interpretation of wetlands would benefit the public, by providing additional recreational activities associated with wildlife education. Unintentional vandalism and wildlife depredation should decrease with public information and interpretive exhibits and trails.

Mescalero Sands ACEC

Oil and gas leasing closures in the Mescalero Sands ACEC would enhance motorized and non-motorized recreational opportunities by reducing oil or gas exploration and production activities. Drilling and production equipment associated with such activity would be incompatible with user safety in an intensive recreation-use environment. Noise and odors from oil and gas exploration and production activity would also negatively affect users who visit other parts of Mescalero Sands for solitude and visual quality. Closures would also protect the ACEC core area from ground-disturbing activities associated with exploration and production.

The ACEC, including the National Natural Landmark, would be closed to mining and solid mineral leasing, which would protect the core area from ground-disturbing activities associated with mining.

The acquisition of private and state lands in the ACEC would have long-term benefits to recreation and wildlife management. Benefits would include improved manageability of plant and wildlife habitat, protection of the existing NNL, and acquisition of legal and physical access for non-motorized recreation.

The ACEC would remain open to livestock grazing and associated range management activities. This could negatively influence or impair natural ecological processes meant to be protected, and potentially degrade recreational experiences based on solitude and visual appreciation of the ACEC. No new range improvements would be constructed. Recreational opportunities based on solitude and visual appreciation would be enhanced only in the existing NNL.

Opportunities for motorized vehicle use would be increased. These opportunities, however, would have long-term direct and indirect negative impacts on the ACEC. With the exception of approximately 2,400 acres in the ACEC that would be closed to OHV use, additional roads (either constructed or developed simply through use), and negative by-products of OHV use (e.g., crankcase oil spills, litter, and disturbance of vegetation and stabilized dunes) could result.

More nature viewing and hiking opportunities would be provided to visitors not using OHVs. While visitors wishing to drive into the dunes would be negatively affected by OHV closures, off-highway driving opportunities would exist on designated roads and trails adjacent to the ACEC and throughout the Mescalero Sands North Dune OHV Area.

Fort Stanton ACEC

Mining mineral materials would impair visual resources in the vicinity of the activity until the mining site is reclaimed. During actual mining activity, noise, dust, and vehicles would negatively impact recreational experiences based on solitude and visual appreciation of the area.

Major rights-of-way would be excluded from the ACEC. This would result in benefits to recreation by protecting the ACEC from major surface disturbing activities, visual intrusions and activities associated with construction and maintenance.

Land acquisitions would enhance public recreation opportunities by improving manageability of the Rio Bonito Campground, providing hiking access to Rio Bonito Falls and providing additional acreage for wildlife viewing, hunting and other recreational pursuits.

Exclusion of livestock grazing from campgrounds, trails, day-use areas, sensitive archeological sites, interpretive trails, waysides, overlooks and caves, would benefit recreation by eliminating conflicts between visitors and livestock.

The designation of additional miles of multi-use trails would benefit recreationists who enjoy mountain biking, hiking and horse back riding. Increasing the number of trails in the Fort Stanton ACEC would allow recreationists to view back country wildlife and provide hunters a greater opportunity for hunting or wildlife viewing.

Camping restrictions would benefit recreation by protecting visual quality, reducing impacts to wildlife and habitat, decreasing the proliferation of roads, fire pits, soil compaction, vegetation removal and litter. Camping restrictions would negatively affect recreationists accustomed to driving or camping near the water's edge or next to a highway or developed area.

The annual seasonal closure of Fort Stanton Cave from November 1 through April 15, would continue to benefit cave-adapted biota, especially wintering bat populations. This annual seasonal closure would have long-term benefits to bat populations because hibernacula would be protected from life-threatening human disturbances.

The OHV designation, limited to designated roads and trails, would benefit a variety of recreational opportunities and experiences. However, it would have a negative impact by restricting activities of those who participate in cross-country off-road driving.

Roswell Cave Complex ACEC

Designating exclusion areas for major rights-of-way would help protect caves by reducing surface disturbing activities. Impacts associated with construction in rights-of-way include: accelerated erosion, surface disturbing activities, increased vehicle traffic, drilling, blasting, vegetation removal, and pollution and contamination from leaks and spills from

ruptures or breaks in pipelines.

Acquiring up to 4,920 acres of private lands would have long-term benefits for cave resources and recreation management.

Improved manageability of cave systems, including better protection of bat populations, cave biota, and hydrologic systems would result. If private lands are not acquired, acquiring conservation easements would be a option. The easements would also have a long-term benefit on the manageability of cave systems and recreational use. Recreational caving opportunities would be enhanced by providing legal and physical access.Cave exclosures would provide long-term benefits for cave resources and recreational opportunities by protecting watershed values, the health and safety of cave visitors, and fragile surface archaeological resources around cave entrances.

The closure of Bat Hole and Coachwhip caves would provide long-term benefits for bat populations and cave resources. The closure of these caves to recreation would have a negatively affect recreational use. Cave exclosures would benefit cave entrances, sinks, and fragile cave ecosystems. Accelerated erosion around cave entrances caused by off-road driving would decrease. Exclosures would have a negative impact on cavers who like to drive to the edge of cave entrances, and on OHV users.

EFFECTS OF SURFACE DISTURBING ACTIVITIES (GENERAL DISCUSSION)

Surface disturbances accelerate erosion rates beyond natural occurring levels. Reducing vegetative cover, damaging soil structure, exposing soils to wind, and concentrating surface runoff make soils more susceptible to erosion. Excessive soil loss leads to decreased site productivity, impairment of water quality, damage to aquatic habitat, increased flood risk, increased susceptibility to droughts, shortened life span of sediment control structures, and other negative impacts.

Soil losses can be effectively irreversible due to the slow rate of soil development. The loss of soil results in reduced forage production, as well as impaired watershed function. Without adequate soils, vegetative cover is reduced, leading to lower infiltration rates, greater and more rapid surface runoff during storms, higher peak flows during floods, and less groundwater recharge. This decreases discharge from springs, especially during droughts when it is needed most. With less vegetative cover and higher runoff rates, watersheds are even more susceptible to soil losses, further aggravating the problem.

Steep Slopes and Fragile Soils

Restricting occupancy and use on steep slopes could reduce soil losses by as much as 90 percent immediately following rehabilitation efforts when the site is most vulnerable to erosion. Reductions in soil loss would rapidly decrease as the site becomes revegetated.

Actual soil loss reductions would depend on site-specific conditions, natural baseline losses, type and extent of disturbance, number of disturbed sites, and mitigation measures used. Impacts due to mineral material extraction and OHV use are addressed under sections on Oil and Gas Activity and Recreation, respectively.

Floodplains

Encroachment on a floodplain can cause short- and long-term changes that can be concentrated at the disturbed site or dispersed over large areas. Detrimental effects from encroachment include increased flood hazard, increased sedimentation to the channel, gully initiation, decreased water retention, and decreased groundwater recharge. Secondary effects, such as impairment of water quality, damage to aquatic and riparian habitat, and shortened life span of sediment control structures are also possible. Some of these effects occur over decades as the system adjusts to the disturbance.

Playas and Alkali Lakes

Playas and alkali lakes can be important ephemeral sources of surface water, and can be primary ground-water recharge areas (Haukos and Smith 1992). Buffer strips (where surface occupancy would be prohibited) would protect the rate and quality of ground-water recharge. Buffers would trap sediment being transported from uplands to the playas, preventing recharge areas from being sealed. Compaction of the recharge areas would also be reduced or eliminated. The quality of ground-water recharge would be protected from accidental contamination by providing additional opportunities for containment, dilution, or breakdown by soil microbes prior to reaching recharge areas.

A buffer would protect the rate and quality of discharge water from springs and seeps in a manner similar to the protection of recharge water at playas. Compaction and sedimentation of springs and seeps, which can slow or stop spring discharge would be prevented.

The benefits of a buffer at cave or karst features are similar to those identified for playas. However, the need to prevent contaminant movement from the surface to ground water is more important because of the rapid movement of ground water in karst topography.

OIL AND GAS MANAGEMENT

The most significant effect of oil and gas activity on soil and water resources is soil erosion. Table 105 shows estimates of cumulative soil losses due to various surface-disturbing activities. [*NOTE: Table 105 has not been renumbered from the Draft RMP/RMPA/EIS. As a result, it is not in sequence with other tables in this document.*] Appendix 18 in the Draft RMP/RMPA/EIS lists assumptions made in the analyses.

Access roads and pipeline rights-of-way account for the majority of soil losses due to the large area of disturbance, their long slope lengths, and their relatively steep slopes. Mineral pits and well pads can also contribute relatively small amounts.

Analyses indicate that in the CRA properly constructed well pads that are compacted and covered with caliche can have lower soil losses than undisturbed sites. However, the amount of soil loss associated with well pads is relatively small. Also, difficulties in revegetating pads once abandoned make them susceptible to long term soil losses.

The estimate of soil losses due to oil and gas activities assumes construction and maintenance is performed according to standard operating procedures. Local effects, such as gullying could be severe if appropriate mitigation measures are not taken. Mitigation could include providing proper drainage for roads, properly constructing and maintaining well pads, and ensuring adequate revegetation efforts.

OTHER MINERALS MANAGEMENT

Although soil loss estimates from mineral material pits are relatively small, site specific impacts could be significant. Gully initiation could occur, especially in highly erodible soils in drainages. Pits could also be an additional source of sediment that could eventually add to the cumulative sediment load in the Pecos River.

VEGETATION MANAGEMENT

The primary objective for watershed protection under the desired plant community (DPC) concept is to maintain an adequate vegetative cover. The benefits provided by an adequate vegetative cover include: (1) *promotion of soil structure* by incorporating organic matter into the soil, enhancing microbial activity, and protecting the surface against compaction and surface disturbance by livestock, vehicles, and other users; (2) *reduction of erosion rates* by protecting the soil surface against raindrop impact and wind, reducing the amount and peak rates of surface runoff, and dissipating the energy of surface runoff, thereby reducing its ability to detach and transport soil particles; and (3) *enhancement of water availability* by increasing infiltration rates, increasing available soil water and ground-water recharge, and decreasing net evapotranspiration rates. Secondary benefits would include improved water quality (less sediment, dissolved salts and other substances moving via overland flow), improved site productivity (maintaining soils on-site and increasing fertility and available soil moisture), and reduced flood hazards.

Implementation of DPC would have short and long term effects. Long term soil losses would be the same for all alternatives and are shown in Table 106. [*NOTE: Table 106 has not been renumbered from the Draft RMP/RMPA/EIS. As a result, it is not in sequence with other tables in this document.*] Achieving the DPC for all communities would reduce soil losses from public lands in the Roswell Resource Area by approximately 50 percent. Short term effects are difficult to quantify because of the variability in the types of treatments, their areal extent, and site-specific conditions at treatment locations.

The lag period and temporary "buffers" proposed for chemical treatments would reduce the chance of harmful cumulative effects from excessive pesticide applications by dispersing treatments over an area and over time. The effects could include contamination of surface or ground water, and exposing large areas to erosion in the short term.

TABLE 105

ESTIMATES OF CUMULATIVE SOIL LOSSES DUE TO SURFACE DISTURBING ACTIVITIES. SOIL LOSSES FROM RILL/INTERRILL EROSION IN THOUSANDS OF TONS FOR THE ROSWELL DISTRICT OVER A 20-YEAR PERIOD.

Activity	Cumulative Soil Loss Due To Activity	Cumulative Soil Loss Due To All Sources	Soil Loss Due to Activity As Percentage of All Sources
	Roswell Resource Area		
Mineral Pits[1]	3.78[2]		0.0028[2]
Well Pads	1.16		0.00087
Rights-of-Way	194	133,000[3]	0.15
Access Roads	183		0.14
RRA Total	382		0.29
	Carlsbad Resource Area		
Mineral Pits[1]	15.5[2]		0.017[2]
Well Pads	-0.80		-0.00086
Rights-of-Way	506	92,500[4]	0.55
Access Roads	354		0.38
CRA Total	875		0.95
	Roswell District		
Mineral Pits[1]	19.3[2]		0.0085[2]
Well Pads	0.36		0.00016
Rights-of-Way	700	226,000	0.31
Access Roads	537		0.24
RDO Total	1,260		0.56

[1] Soil losses from mineral pits resulting from all demands for saleable minerals; highest demand from the oil and gas industry.

[2] Assumes three pits per year would be reclaimed.

[3] Soil losses from all sources in Chaves and Roosevelt Counties.

[4] Soil losses from all sources in Lea and Eddy Counties.

Source: BLM files, 1994.

TABLE 106

**ESTIMATES OF LONG-TERM ANNUAL SOIL LOSSES FOR EXISTING VEGETATIVE COVER AND THE DESIRED PLANT COMMUNITY.
PREDICTED SOIL LOSSES DUE TO RILL/INTERRILL EROSION IN THOUSANDS OF TONS PER YEAR FROM PUBLIC LANDS IN THE ROSWELL RESOURCE AREA.**

Community Type	Estimated Public Land Acres	Estimated Soil Loss in 1000s of Tons Per Year	
		Existing Vegetative Cover	Desired Plant Community
Grassland	838,000	180	110
Shinnery Oak-dune	270,000	28	8.4
Mixed Shrub Malpais	*	*	*
Pinion-Juniper	114,000	61	35
Mixed Desert Shrub	238,000	180	71
Drainages, Draws, Canyons	30,000	6.0	2.5
Total Annual Soil Loss	1,490,000	460	230
Total Soil Loss Over 20-Year Period	1,490,000	9,200	4,600

Assumptions: 1. All soil loss numbers are reported to two significant figures. 2. Soil losses from Malpais are negligible. 3. Only soil losses from BLM lands are estimated. 4. Vegetative cover under DPC is assumed to be the arithmetic average of the minimum and the maximum percentages of bare ground and canopy cover shown under the percent-cover column in tables in the Vegetation Management section of Chapter 2. 5. Soil losses are due to rill/interrill erosion only. Soil losses from other forms of erosion, such as gullying, streambank erosion, and other processes are assumed to be proportional to soil losses due to rill/interrill erosion. This tends to minimize the difference in soil loss estimates in the existing condition and DPC condition for Drainages, Draws, and Canyons.

Source: BLM files, 1994.

Alternative practices to chemical treatments, such as grazing, prescribed fire, and mechanical treatments, have other negative effects. These include damage to soil structure which can decrease infiltration and reduce available soil, water and ground-water recharge; exposure of soils to wind or water erosion; and increased sedimentation to streams.

Impacts from the use of annual plant production would tend to be short-term and concentrated in the areas of heaviest use, assuming the trend in vegetative cover is toward the DPC. Soils would be less prone to short term erosion under the Proposed Plan than under current management.

RECREATION MANAGEMENT

Impacts from recreational site development along the Rio Bonito (Tracts 1-4) would result from construction and ongoing use of sites, once developed. Dirt roads, trails, and parking areas would create a long-term source of sediment. Soils of the surrounding uplands where access roads would most likely be located are shallow and extremely susceptible to water erosion (USDA Soil Conservation Service 1983a). Proper design and ongoing maintenance would be required to prevent sediment loading to the Rio Bonito. Also, the short-term threat of sedimentation during construction would be severe unless necessary mitigative measures were taken.

Hiking, wading, and fishing from the banks would cause some degradation of the stream channel. Increased sedimentation from these activities, and other wastes would impair water quality to some degree. Due to the Rio Bonito's unique quality, its level of development, and water demands, cumulative effects are particularly important. Sources of sediment exist upstream of the acquired reach, and impair water quality, aquatic habitat, and recreational opportunities. Any recreational development would have to limit additional sources of sediment and other contaminants to the extent possible.

Watershed impacts at the Billy the Kid Recreation Site would be similar to those on the acquired Rio Bonito lands. Cumulative impacts would be less severe because the area is smaller and would have fewer visitors.

The Garnsey Bison Kill Site is along ephemeral drainages that flow to Dimmit Lake. Soils in the drainages are highly susceptible to water erosion, so construction in the drainages would generate sediment that would flow to the lake during storms. A buffer located below development and above the drainage would mitigate much of the erosion effects. Locating development on upland soils that are less erodible and less steep would result in less sedimentation.

By disturbing the soil surface, off-highway vehicles (OHVs) compact the soil, expose soils to accelerated wind and water erosion, and reduce the amount and diversity of vegetation (Stebbins 1974, as reported by Bury et al. 1976). Cumulative impacts could be reduced by concentrating use of OHVs to areas of intensive management. Sensitive areas could be protected, and impacts would be mitigated in areas of intense use.

Although the Proposed Plan would provide increased emphasis on OHV management by limiting OHV use to designated roads and trails, continued use on highly erodible soils, illegal use, and route proliferation would still be difficult to control.

The impacts of OHV use could be severe in some cases. Even when roads and trails are maintained to stringent standards, high-intensity storms could cause significantly more sedimentation to water bodies. Roads and trails adjacent to springs could damage the source and reduce discharges. Also, contaminant spills (e.g. petroleum products) would be flushed directly to the water source and seriously impair water quality.
Generally, though, the 200-meter buffer would adequately protect most sources. Exceptions would occur on steep slopes where runoff is rapid and OHV impacts are severe in the drainages.

WATERSHED MANAGEMENT

Water is an extremely important resource in the District, often being the limiting factor in agricultural, industrial, and municipal functions. As such, protection of the quality of surface and ground water is imperative.

Best Management Practices (BMPs) would protect water quality by specifying the most appropriate techniques for industrial operations, construction, vegetation treatments, and other management actions. The BMPs would mitigate the effects of sedimentation, thermal pollution, nutrient loading, the introduction of pesticides, volatile organics, and other contaminants to surface or ground water, and any other form of nonpoint source of water pollution. Monitoring BMPs would demonstrate benefits and direct adjustments over time.

Further degradation of water quality would be prevented whenever practicable. Actions resulting in economic returns or environmental benefits that would exceed any environmental degradation would be permitted under the Proposed Plan. Careful attention would be given to actions that would result in short-term gains, but would cause long-term degradation of water quality, such as mineral development or grazing on sites that are prone to chronic soil loss. Actions affecting ground-water quality would be particularly serious because of people's reliance on the resource, and the difficulty and expense of clean-up once contaminated.

Bureau of Land Management policy requires that a DRASTIC analysis of ground-water pollution potential be performed prior to chemical treatments of vegetation. On a regional scale, most of the Roswell District is categorized as moderately vulnerable to ground-water contamination (U.S. Environmental Protection Agency 1987, as reported in USDI Bureau of Land Management 1991).

Conducting a site-specific DRASTIC analysis would provide more precise information on a project area. Therefore, chemical treatments that would potentially contaminate ground-water would be prohibited or modified, and chemical treatments that are safe and effective would be allowed.

Under the Proposed Plan, detailed information would be required in deciding whether to prohibit, modify or proceed with a chemical treatment. Pesticides would then be used only when the assessment of all options suggest that chemicals are the safest and most effective treatment available.

WILDLIFE HABITAT MANAGEMENT

The Proposed Plan supports efforts to control saltcedar on the Pecos River, Rio Bonito, and Salado Creek. Evapotranspiration rates could be reduced, thus enhancing water availability through increased ground water storage, spring discharge, and stream base flow.

Saltcedar was originally planted for streambank stabilization and flood control. Streambank stabilization could replace this function of the removed saltcedar, and should be considered in any saltcedar control plan. Stabilization efforts could reduce bank scour and sloughing along other stream reaches without present stands of saltcedar. Indirect benefits would include improved water quality, improved aquatic and riparian habitat, and enhanced recreational opportunities.

Spring or riparian exclosure fences, plantings, and other enhancement efforts would improve the natural function, productivity, and diversity of these resources, thus providing several benefits. Among them are enhanced water availability, improved water quality, and natural flood control. Indirect benefits would be provided for wildlife, recreationists, and other water users.

Agricultural practices and moist soils management along the Rio Bonito would require irrigation. Total water demands would depend on the type of feed grown, the total area to be irrigated, precipitation, and how much loafing and nesting habitat would be flooded. It is expected that a fraction of the water rights obtained in the acquisition of riparian lands along the Rio Bonito would accomplish these objectives during most years. Sediment and nutrients would also be delivered to the Rio Bonito from irrigation return flows and the cultivated lands.

Increasing the number of available water sources in the resource area would provide more water sources to disperse livestock herds and wildlife populations, moderating localized impacts near existing sources. Impacts that would be reduced include overuse of surrounding vegetation, compaction of soils, accelerated erosion rates and gully initiation, and concentration of water pollutants, such as nutrients and coliform bacteria associated with animal waste.

Proper planning of water developments is necessary to disperse livestock and wildlife. Benefits could be negated by developing waters near an existing source, placing mineral blocks near the waters, or concentrating animal use in other ways.

FIRE MANAGEMENT

Prescribed fire provides indirect benefits for soil and water resources as a vegetation management tool. First, prescribed fire is a means to achieve the desired plant community which has watershed protection value. Second, managing fuel loads reduces the risk of wildfire which often leads to severe damage by burning too much vegetation and heating the soil excessively, exposing the area to accelerated erosion rates, and making revegetation difficult. Also, fire fighting measures, such as construction of fire lines are often more damaging than the fire itself.

Secondary impacts from wildfire can also be significant. Soil losses lead to reduced site productivity, sedimentation of waters, impaired water quality, and impaired riparian and aquatic habitat. Effects can persist for years, and when soil losses are high, effects can be irreversible. Impacts to soil and water resources from suppression efforts would be partially mitigated during wildfires by tailoring suppression tactics in a manner which is less harmful to the environment.

The Proposed Plan calls for the restrictive use of bulldozers, engines, and retardant drops around cave or karst areas and on steep slopes. Fort Stanton, the Overflow Wetlands, Valley of Fires, Border Hill National Natural Landmark, and playas could suffer surface disturbance by bulldozers and engines and temporary impairment of water quality by retardant drops.

Short-term negative impacts associated with prescribed fire include construction of fire control lines, temporary loss of vegetative cover, and exposure of soils to erosion. However, vegetation usually recovers quickly and negative impacts are typically undetectable within a year.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Overflow Wetlands ACEC

The treatment of saltcedar with chemicals would be limited to hand or ground applications. Chemical treatments adjacent to the river could impair water quality somewhat in the short-term. Overspray or drift would be significant for aerial applications only. Individual project areas are usually not extensive, therefore would not be significant in the long-term. The BLM should coordinate with other saltcedar control efforts on the Pecos River to avoid adverse cumulative effects.

The ACEC would protect approximately 5 miles of the Pecos River corridor. Restricting surface disturbances and OHVs would allow banks to stabilize and riparian vegetation to become established throughout the reach. Coupled with grazing adjustments and saltcedar control, a positive change in the function of the floodplain would be expected. Benefits would include the natural moderation of floods, maintenance of water quality, and enhanced groundwater recharge. Secondary benefits would include improved aquatic and riparian habitat, and improved scenic quality. Similar benefits would be expected on the wetlands and surrounding uplands, especially where OHV use would be limited to designated roads and trails.

Disturbances in the uplands would probably increase the rate of sedimentation to the wetlands. A fairly consistent discharge of approximately five cubic feet per second flows from Lea Lake at Bottomless Lakes State Park through the wetlands. Flow through the wetlands could become confined to a more well-defined channel, decreasing the extent of the wetlands, but evolving to a more productive riparian habitat along the channel.

North Pecos River ACEC

The ACEC would protect approximately 13 miles of river corridor. Restricting surface disturbances and OHVs would allow banks to stabilize and riparian vegetation to become established throughout the reach. Coupled with grazing adjustments and salt cedar control, a positive long term change in the function of the floodplain would be expected.

Some benefits of the ACEC may be apparent within the ACEC, but may not significantly reduce the cumulative effects of the restricted activities. For example, minerals extraction that may have occurred if the ACEC was not

established could still occur outside the ACEC. Any soil losses, sedimentation, and impairment of water quality would occur in a location outside the ACEC. Cumulative effects could actually be more severe by restricting use in the ACEC. Closing a portion of the ACEC to OHVs protects the ACEC, but displaces them to other areas that could experience chronic soil losses and degradation.

Mescalero Sands ACEC

Restrictions on surface disturbance in the proposed ACEC will help limit surface disturbance and exposure to wind erosion in the short-term. The Dune and Roswell-Jalmar complex soils of east Chaves County are excessively drained sands (USDA Soil Conservation Service 1980). None of the area is prone to water erosion, but the shifting dune sands are naturally unstable, and the entire area is highly susceptible to wind erosion. When the surface is disturbed, exposure to wind is increased and revegetation is difficult. Excluding surface disturbance would minimize wind erosion and give vegetation the best chance to become established.

Impacts due to rights-of-way would be short-term in terms of wind erosion and loss of vegetation. Closure to future oil and gas leasing would help avoid surface disturbance within the ACEC boundary. If stocking rates and timing are strictly controlled, livestock grazing could be an effective vegetation management tool, especially in areas where the use of prescribed fire is limited by light fuel loads, and chemical treatments are prohibited.

Because OHV use is the most significant impact likely to occur in the ACEC, restrictions on use would provide more protection of the ACEC than current management. Cumulative effects associated with OHV use could be severe because the ACEC would allow continuous intensive use by OHVs. Exposure to wind erosion would be extensive and vegetation would be unable to effectively reestablish itself. However, the net effect of allowing OHVs in the ACEC could be beneficial by providing a location for intensive management of OHVs.

Fort Stanton ACEC

Construction activities requiring ROWs can lead to significant soil losses and consequent impacts to water quality, and riparian and aquatic habitat.

Disposal of mineral materials would not have a significant effect due to the limited area and degree of disturbance. However, mineral pits can have localized impacts. Each proposal for mineral materials disposal would have to be evaluated for local impacts.

As discussed under the Mescalero Sands ACEC section, restricting livestock grazing prohibits its use as a vegetation management tool that could have long-term benefits when proper stocking rates and seasons of use are observed. Livestock grazing would produce secondary impacts to water quality, aquatic and riparian habitat, recreational opportunities, and scenic quality. Limiting or excluding livestock grazing from riparian and highly erodible would protect watershed function, while maintaining the flexibility to manage vegetation elsewhere with grazing.

Roswell Cave Complex ACEC

Some activities restricted under the Roswell Cave Complex ACEC have had impacts discussed previously in this section. General watershed impacts are discussed under the general discussion of Effects of Surface Disturbing Activities. Impacts due to OHVs, recreational facility development, and fire suppression efforts are discussed under above, as well.

The Proposed Plan would afford protection of ground water by restricting hazardous substances within cave exclosures. Fence exclosures would prevent soil disturbance by livestock and resulting sedimentation to cave entrances.

In this section, the effects of oil and gas development and the Surface Use and Occupancy Requirements (Appendix 3) on wildlife and wildlife habitat are discussed in detail. Following that discussion, the effects of other actions proposed in the alternatives are analyzed. Finally, the effects of ACEC designation are described.

OIL AND GAS MANAGEMENT, SURFACE USE AND OCCUPANCY REQUIREMENTS

The loss of bats, neotropical migratory birds, waterfowl, and other nongame bird species would be lessened by the netting requirements of disposal pits and tanks associated with oil and gas development. Likewise, losses of these species would be reduced by the requirement to cap vent stacks of oil and gas production equipment.

Typical geophysical exploration operations would displace wildlife from the area of disturbance during the operation. Wildlife would return once operations were complete. Three-dimensional geophysical exploration activities would increase habitat disturbance seven-fold due to the concentration of seismic lines in a grid pattern over a specific area. Creation of new roads from repeated vehicular travel during geophysical exploration, and possible continued use by the public, would reduce the area of undisturbed wildlife habitat, thereby decreasing the quality of habitat for prairie chickens, raptors, mule deer and pronghorn antelope. Increased disturbance and human access would directly impact important habitat features such as booming grounds, nesting areas, and fawning areas. There would be cumulative negative impacts to wildlife habitat resulting from repeated geophysical activity conducted in the same area over time, particularly 3-D geophysical operations.

Future oil and gas development would initially result in the direct loss of wildlife habitat. About 11,200 acres would be lost from construction of production facilities, about 16,200 acres from road construction, and about 3,600 from pipeline construction. Oil and gas field development would have negative, long-term cumulative impacts to wildlife habitat due to the magnitude and concentration of surface disturbance, such as oil and gas pads, pipelines, access roads, and power lines, and associated human activity in the area. A potential increase in illegal harvest of mule deer, pronghorn antelope and prairie chicken is possible when more human activity is occurring in the general area. Wildlife abundance and diversity is expected to decrease. These areas would not be fully reclaimed and portions would remain unusable for wildlife for 20 years or more.

Individual oil and gas wells usually do not result in negative impacts to wildlife or wildlife habitat due to the small area of disturbance, in contrast to field or complete lease development. Wildlife can become habituated to a development over time, depending on the type of disturbances emanating from a site, such as an unmuffled pumpjack or regularly visited tank battery.

Positive impacts from oil and gas facilities include use by wildlife of structures as perching or nesting areas and use of abandoned drill pads as booming grounds. Improved public access to areas for wildlife viewing or hunting, use of abandoned pads as livestock watering sites, and use of facilities for shade and burrowing sites for small ground-dwelling mammals and reptiles also are benefits. Additional wildlife benefits could be derived from oil and gas development if sites were managed to be wildlife and habitat-friendly. Examples include not clearing raptor nests from structures, keeping clean sites, using protective measures to prevent loss of wildlife, planting vegetation near pads, or developing water sources when suitable water is encountered during drilling and wells are subsequently abandoned.

Overall, the magnitude of impacts to wildlife habitat depends on the development of leases or well spacing requirements. Habitat fragmentation would result from the cumulative effects of wells in a given area or lease.

Developed oil and gas fields would continue to have long-term negative impacts to wildlife populations and habitat due to the operation and maintenance of producing wells, pipelines, and access roads. The loud, non-electric motors associated with pump jacks and compressors are the main noise affecting the booming activities and nesting activities throughout prairie chicken habitat. Wildlife displacement from noise and visual intrusions would continue to occur within established fields.

Surface use and occupancy restrictions are needed to limit oil and gas development in state-listed endangered sand dune lizard habitat and in lesser prairie chicken habitat. This crucial habitat type found on adjacent private and state lands is not afforded the protection that is given to public lands, making the public lands even more significant as preserves for prairie chickens, sand dune lizard and the shinnery oak-dune community.

Suitable sand dune lizard habitat located within "occupied habitat" would be protected by a 100-meter no surface occupancy stipulation, resulting in the protection of microhabitats while allowing oil and gas development to occur in non-suitable habitat.

Applying an extended timing restriction (from near the beginning of the booming period through the approximate end of the nesting period, March 15 through June 15) over about 1,395,415 acres of habitat in the Roswell District would further benefit populations. Extending the timing stipulation into March would reduce direct disturbance to booming activities. In the Carlsbad Resource Area, extending the timing stipulation into June would not be of much benefit to chicken populations in the current 162,822 acre habitat area, because many of the oil and gas leases there are completely developed, or are in the development stages.

Concurrent with timing stipulations, areas of "no new drilling" would be established to protect significant prairie chicken leks found in undisturbed habitat. A 200-meter offset would be applied.

The "no new drilling areas" would protect crucial booming grounds needed for breeding, and would result in the continued viability of prairie chicken populations in the Roswell District. Prairie chicken leks would be protected throughout the Roswell District with a 200-meter offset. Benefits from implementing offsets include preserving significant booming grounds (leks) and nesting habitat for prairie chickens, and other game and nongame wildlife species habitat, from surface disturbing activities associated with oil and gas development.

The "no new drilling" area around identified leks in the Carlsbad Resource Area would greatly reduce overall disturbance to the leks and would potentially protect nesting habitat in current 162,822-acre habitat. Under these alternatives, an additional 297,879 acres in the Carlsbad Resource Area would be subject to this requirement. This would allow protection of habitat and curtail the destruction of leks by future development.

Reducing noise from pump jack engines to a maximum of 75 decibels (db) will potentially support reestablishment of booming grounds around existing loud pump jacks. Females will be able to hear the booming males and potentially increase reproductive success (i.e. more poult groups) as a result of reducing noise levels.

The application of surface disturbance limitations, in the form of Surface Use and Occupancy Requirements, to protect prairie dog towns would benefit the grassland ecosystem, special status species and biological diversity. The protections would help preserve the small number of remaining towns, which provide habitat for a number of sensitive species.

Site-specific habitat features, such as wildlife habitat projects, raptor nesting sites, and cave or karst features, would be protected from oil and gas development by a buffer of up to 200 meters. Long-term benefits would be the maintenance of wildlife distribution and abundance in areas served by these features. Project effectiveness and feature desirability would be compromised by activities within 200 meters or closer, because habitat and human disturbances would cause wildlife to leave the area or avoid using these features.

If the buffer for wildlife projects is waived, required off-site mitigation would result in no net loss of projects. The degree of benefits for wildlife would depend on the location and quality of the replacement project. Impacts could be positive or negative. Negative impacts would occur if a wildlife watering unit currently providing for local wildlife populations is replaced with another unit located in another area that may not be the best location. Wildlife abundance would decrease within the original project area.

Raptor nesting success would increase over the success expected under current management, as a result of delays in activity of up to 90 days that allow completion of nesting activities. Nesting structures and active and inactive nests would be protected for future use by restricting surface disturbance within up to 200 meters of the nest, essentially to the extent they are protected presently. Potentially, the 90-day delay period proposed under these alternatives would bring about an increase in the overall raptor populations.

The buffer from oil and gas development of up to 200 meters from floodplains and playa or alkali lakes would result in the protection of riparian and aquatic habitat for a variety of wildlife species dependent on these habitats for all or part of their life cycle. This restriction would preclude habitat and wildlife disturbance and preserve the resource value of these areas for wildlife needs such as nesting, fawning, feeding and resting. These areas are unique and critical for the survival and maintenance of wildlife populations and biodiversity. Wildlife harassment and displacement would be further reduced and would include additional upland habitat protection for wildlife species dependent on habitat edges, which are the most diverse habitats due to the transition between vegetation types. Improved public access into previously undisturbed habitat would increase wildlife harassment and displacement.

The 200-meter buffer from surface disturbing activities would afford long-term benefits to riparian, aquatic and wildlife habitat, and would preserve and enhance these areas for continued wildlife diversity and abundance. Not only would the source be protected, but the portion of the watershed surrounding these sources would be preserved. Negative impacts from activity around seeps and springs include sedimentation of springs or seeps, destruction of downstream riparian/wetland habitat, and wildlife displacement because of impaired habitat conditions or increased human activity from the developments.

OTHER MINERALS MANAGEMENT

In the Roswell Resource Area, the effects of mining minerals other than oil and gas would be similar to the surface disturbing impacts produced by oil and gas development. Generally, wildlife habitat would be lost or degraded. These impacts could be considered long term, because habitat would not be replaced until mining ceases. Wildlife displacement would also occur because of the presence and activity of humans. These indirect impacts would be minor, short-term and confined to periods of exploration or mining activity.

It is estimated that fewer than 100 acres would be disturbed annually by activity related to the mining of locatable minerals. Disturbance would generally be limited to areas of less than five acres per operation, per year. Disturbance would be reclaimed when mining ceases. Overall, these impacts are considered to be minimal.

The mining of solid leasable minerals and salable minerals is discretionary. Management control would be exercised over the locations and methods of mining, and impacts to wildlife and wildlife habitat would be partially mitigated, as a result. Interest in exploring for solid leasable minerals remains low. An estimated one to ten exploration permits could be issued, per year. An estimated 200 acres would be disturbed over the next 20 years by the mining of salable minerals. The impacts associate with both solid leasable and salable mineral exploration and mining are considered to be minimal.

Further mitigation of impacts, especially those related to solid leasable and salable minerals, would result from the use of the Surface Use and Occupancy Requirements. Applicable guidelines would be applied to any authorization

to conduct mining of these categories of minerals.

LANDS AND REALTY MANAGEMENT

Exclusion and avoidance areas for location of rights-of-way would have positive, long-term effects on wildlife habitat within the core prairie chicken areas, Rio Bonito acquired lands, Mathers RNA, Wilderness Study Areas, and ACECs, by protecting wildlife habitat from surface disturbing activities and human activity associated with ROW maintenance. The abundance of wildlife in these areas would be preserved.

Existing exclusion zones would protect wildlife habitat from major rights-of-way (ROW). Several of the protected areas are National Natural Landmarks and not necessarily significant wildlife habitat areas. Of the exclusion areas, the two WSAs, comprising about 25,321 acres, and the 6,617-acre Mescalero Sands Recreation Complex, provide more significant wildlife habitat. Long-term benefits on about 32,000 acres of wildlife habitat in these areas include the protection of a unique lava flow ecosystem with its distinctive flora and fauna, and the protection of a small area of Mescalero Sands which support important lesser prairie chicken and sand dune lizard habitat.

Major ROWs, such as gas transportation pipelines and power transmission lines, would have greater impacts to other significant wildlife habitat areas. Impacts include direct loss of habitat and displacement of wildlife in the construction area. Moderate long-term impacts, primarily wildlife displacement, would result due to an increase in human activity in maintaining ROWs, and from increased access to new areas previously inaccessible to the public. Possible benefits would be the use of certain types of facilities, such as raptor-safe power lines, for perching raptor species, and cleared corridors as prairie chicken booming grounds in Mescalero Sands.

Cumulative impacts of all land use authorizations in important wildlife habitat areas would result in habitat fragmentation and decreased wildlife habitat use due to increased human activity associated with facility maintenance.

The acquisition of private and state lands resource area-wide would result in long-term benefits to wildlife and habitat. Benefits include improved manageability of wildlife and riparian/wetland resources and potential for increasing wildlife abundance and distribution through habitat protection and enhancement.

The disposal of as many as 150,000 acres of public land would not have a major impact on wildlife or habitat, because lands supporting important big game habitat, riparian-wetland areas, and critical T&E habitat would be evaluated for retention in public ownership.

LIVESTOCK GRAZING MANAGEMENT

Management of 45 allotments according to existing allotment management plans (AMPs) generally would improve the quality of wildlife habitat. Plan implementation, or revision of existing AMPs with wildlife considerations, would have long-term benefits to wildlife and habitat by specifying utilization of key plant species to increase forage production and cover, and improving the vegetative condition of important plant communities and habitat for T&E species. Other benefits would be diverse habitat conditions and enhanced wildlife abundance and distribution, and protection of essential habitats for T&E species.

Grazing treatments prescribed in current interdisciplinary AMPs would have long-term benefits to wildlife habitat such as riparian areas, playas, T&E species habitat, and big game/upland game habitat. Benefits include habitat diversity, availability of forage and cover, and increases in wildlife species diversity and abundance. Older AMPs with the emphasis on forage production for livestock may not reflect prevailing wildlife habitat management concerns. Implementation of these plans would produce a gradual decline in wildlife and habitat diversity over the long term.

Prohibiting construction of new netwire fences on public lands would have direct long-term benefits

for existing pronghorn antelope herds by avoiding additional restrictions that prevent their free movement to areas which provide better forage. Netwire fencing reduces habitat that would otherwise be available to pronghorn, resulting in substantial long-term negative impacts on pronghorn populations.

Interdisciplinary AMPs developed to achieve DPC and emphasize meeting wildlife habitat and watershed management goals and objectives would be developed for grazing allotments within the Caprock Wildlife Habitat Area (WHA). This would result in long-term benefits to wildlife populations and habitat conditions. Benefits include wildlife and plant species diversity, increased wildlife species distribution and abundance, and protection of essential habitats for T/E species.

Emphasis on watershed, wildlife habitat management, and livestock production would result in long-term benefits to wildlife and habitat. Expected benefits are the same as those described above.

Range improvement projects designed with consideration for wildlife, such as livestock water developments, erosion control structures, reseedings, prescribed fires, vegetative sales, and riparian pasture fences, would generally enhance the quality of wildlife habitat. Vegetative condition, forage production, and habitat diversity would improve, and wildlife species distribution and abundance would increase.

The construction of livestock waters in previously unwatered areas would promote increased wildlife distribution and abundance, but may potentially increase grazing pressure in those same areas. Short-term impacts of range improvement projects would be the temporary displacement of wildlife during construction activities. Improved public access as a result of pipeline and storage tank construction and maintenance activities would increase opportunities for wildlife harassment and displacement over the long term.

Predator damage management (PDM) (animal damage control) activities are conducted by APHIS-ADC under the Master Memorandum of Understanding between the BLM and APHIS-ADC. There are no direct effects of PDM activities to public lands managed by the BLM. The impacts of PDM activities, such as economic impacts to the livestock industry from lack of control or the loss of nontarget wildlife species during control activities, are assessed by APHIS-ADC in their NEPA analyses of control activities. There are some possible indirect impacts of PDM that could affect public lands. For example, recreation activities could be affected by the placement of control devices at or near recreation sites. Indirect impacts to public lands are considered to be insignificant in general, and would be mitigated by the use of the constraints on PDM listed in the Proposed Plan.

VEGETATION MANAGEMENT

Maintaining grassland habitat through the control of mesquite, cholla, creosote and snakeweed would have long-term benefits for T&E species such as the mountain plover and Baird's sparrow that rely on the shortgrass community for their existence.

In general, manipulating vegetative composition using treatments such as prescribed fire, biological controls, chemical, mechanical or grazing treatments, or range improvements, would have long-term benefits for wildlife and habitat, if projects are designed with consideration given to wildlife concerns.

Decreasing the density of invading plant species, such as cholla and mesquite, by mechanical removal would have minimal impacts to wildlife and habitat compared to the alternative of leaving the entire plant community untreated. Actual clearing activities would result in temporary displacement of wildlife and some loss of nesting and cover for wildlife species. This direct impact would be localized to the control area, with a minor shift in wildlife species from those that favor brushy areas to those that prefer a more grassy, open habitat type.

Decreasing the density of creosote, mesquite, snakeweed, and noxious weeds by chemical treatment would have short-term impacts to wildlife resulting from the decrease of food and cover for wildlife species within the control area.

Conversely, vegetation such as grasses and forbs would increase and improve wildlife habitat. The direct impacts would be the same as mechanical removal.

Long-term benefits, such as enhancing habitat diversity by creating vegetative mosaics, edge, and forage production, result when wildlife concerns are considered in the design of a treatment. However, impacts may be negative if treatments are not designed with wildlife considerations, and if proper grazing management (other than periods of rest following treatment), is not implemented to preserve the results of the treatment.

Decreasing the density of the ubiquitous saltcedar with either mechanical (cutting) or chemical control would produce long-term benefits to the natural plant community, particularly riparian-wetland areas, because native vegetation would be able to re-establish itself without competition from saltcedar. Wildlife species diversity would increase in control areas with the removal of monotypic stands of saltcedar that dominate many sites. Native vegetation (either planted or allowed to return naturally) would provide vegetative structural diversity that wildlife prefer. Saltcedar control may have negative impacts to wildlife habitat if saltcedar is indiscriminately removed from areas where follow-up reseeding or plantings are not conducted, or the potential for natural re-establishment of native vegetation is low, or where saltcedar is the only vegetation contributing to stream bank stability. Removal of vegetative cover without considering these factors may leave areas barren and unproductive.

Long-term benefits to wildlife and habitat would result from vegetative manipulation projects and 45 percent utilization levels designed to meet interdisciplinary goals and objectives set by watershed, range and wildlife management programs for each vegetative community type. Vegetation resource condition objectives would be prescribed to meet desired plant community objectives. Chemical control methods could be used to achieve desired plant communities, which would benefit wildlife and habitat.

RECREATION FACILITY MAINTENANCE

Impacts of recreation facility maintenance and expansion, and land acquisitions at the Valley of Fires Recreation Area, and Mescalero Sands North Dune and Haystack Mountain OHV areas would be minimal. If impacts occur, they would be in the form of habitat loss and short-term displacement due to construction and increased human activity, until wildlife became habituated to the activity and improvements. The designated OHV areas would be expanded, resulting in a direct loss of wildlife habitat to trail development, and a broader area of wildlife disturbance due to motorized activity encroaching upon undisturbed wildlife habitat. Long-term negative impacts include decreased wildlife use and habitat degradation within the area.

Low intensity recreational use at the Rio Bonito acquired lands (Tracts 1-4) would result in moderate wildlife disturbance because the lands were previously closed to the general public. Developed access and parking would promote increased public use of the area, resulting in a corresponding increase in wildlife harassment, unless recreational management reflects the needs of wildlife.

There would be minimal impacts to wildlife and habitat from the development of the Billy the Kid Recreation Site and the Gamsey Bison Kill Site. If impacts occurred they would be tied to habitat loss and wildlife displacement. These impacts also would be expected from intensive recreational development on the Rio Bonito acquired lands (Tract 5). Damage to the riparian area along the Rio Bonito would occur from human activity resulting in potential bank erosion, destruction of riparian vegetation, and increased siltation.

CAVE MANAGEMENT

Limiting recreational visitation of certain caves annually from November 1 through April 15 would protect wildlife species that use these special habitat features for shelter, nesting, hibernating and foraging. Long-term benefits to cave biota, specifically hibernating bat

populations, would include the avoidance of bat losses or abandonment of cave habitats by bats and other wildlife species that use the caves. Prohibiting the disposal of human wastes in resource area caves would preserve the biological integrity of the caves, resulting in stable populations of cave biota and prevention of groundwater contamination.

Visitor use limits, seasons of use and a permit system, in conjunction with the 200-meter no surface occupancy restriction around all caves, would result in long-term benefits to wildlife. Long-term benefits include preserving significant cave summer roosts and winter hibernacula for various bat species, protecting biota that live only in cave ecosystems, and preserving habitat diversity for a variety of wildlife that use the caves and surrounding habitat.

OFF-HIGHWAY VEHICLE USE

Intensive motorized recreational use at the North Dune and Haystack Mountain designated OHV areas would cause short-term impacts to a variety of wildlife species when OHV activities are occurring. The magnitude of wildlife harassment from noise and human activity would be greater at the Haystack Mountain OHV area than the developed North Dune OHV area, because the Haystack Mountain location is relatively undisturbed at this time, and has no recreational facilities to attract intensive use to the area. Proposed facilities at the Haystack Mountain OHV area, such as rest rooms, sun shelters, picnic areas, trails and interpretive displays, would promote increased public use of the area. This would result in a corresponding increase in wildlife harassment and a decrease in wildlife abundance.

Closing the Valley of Fires Recreation Area to OHV use would have long-term benefits for wildlife by protecting about 400 acres of wildlife habitat from vehicle damage and reduce wildlife harassment. Wildlife species accustomed to human activity would remain in the area.

Closing the entire Mathers RNA, the two WSAs, the Garnsey Bison Kill Site, the Border Hills Structural Zone National NNL, cave exclosures and other areas to OHV use, would have long-term benefits to about 38,500 acres of wildlife habitat. Benefits include protecting habitat, maintaining wildlife abundance and distribution, and preserving habitat diversity. Limited OHV use to designated roads and trails on acquired lands adjacent to the WSAs, the Valley of Fires Recreation Area, acquired lands along the Rio Bonito, lands surrounding the Garnsey Bison Kill Site, Fort Stanton, and other areas, would protect about 77,500 acres of wildlife habitat from undue degradation. The designation would protect big game and upland game and non-game habitat in the WSAs and significant riparian habitat along the Rio Bonito, and preserve wildlife diversity and abundance. At Fort Stanton, the designation would protect critical cactus habitat, big game and upland game habitat, and riparian habitat from undue habitat and wildlife disturbance. Critical cactus habitat would be preserved, wildlife distribution and abundance would be maintained, and biodiversity would be preserved.

All-terrain vehicles would be limited to roads within the Haystack Mountain OHV area, which would confine wildlife habitat disturbance and wildlife harassment. Opening the existing Mescalero Sands North Dune Recreation Area to OHV use would cause continued wildlife harassment and displacement. The magnitude of negative impacts increases about three-fold over existing levels due to the expansion of OHV use into previously undisturbed areas. Negative impacts include a decrease in wildlife utilization of the area during periods of high OHV use, destruction of dune-stabilizing vegetation, and damage to the few cottonwood trees in the OHV area.

Impacts to wildlife habitat would be insignificant from all-terrain vehicle use at the 640-acre Dunahoo Hills, because the area has been degraded from past OHV use and wildlife values are low. Limiting OHV use to designated roads and trails in all floodplains and riparian-wetland habitat areas along the Pecos River would allow continued vehicular use in these areas, with no additional habitat disturbance. Undesignated roads and trails would be closed to vehicle use and important wildlife and plant habitat would be protected by a decrease in habitat disturbance and wildlife harassment throughout the year. Under Limiting OHV use on about 19,200 acres of floodplains and riparian-wetland habitat areas

along the Pecos River would result in substantial long-term benefits to these areas and wildlife species dependent on this sensitive plant community. About 2,000 acres of playa and alkali lake habitat would be protected from OHV use.

About 950 acres of spring or seep sources and downstream riparian areas would be substantially protected from OHV use, producing long-term benefits for a variety of water-dependent wildlife species.

Limiting OHV use to designated roads and trails on all public lands not otherwise classified or specifically identified as management areas would produce long-term benefits to wildlife and habitat. Wildlife and plant habitat degradation and wildlife harassment would continue, but to a much lesser degree than if the areas were open to OHV use. Road densities and access into important habitat would remain the same or decrease. Undesignated roads and trails would be closed, helping to protect important wildlife and plant habitat from disturbance.

WILDLIFE HABITAT MANAGEMENT

Habitat management activities would produce long-term benefits. Biological diversity in the resource area would be enhance by the protection of T&E animal and plant species and habitat. The condition of plant communities would be improved. The big game, upland game and waterfowl populations would increase, as would the distribution of these species throughout the resource area.

WATERSHED MANAGEMENT

Long-term benefits to wildlife habitat would result from the management of soils and surface watersheds. Construction of watershed projects would cause temporary displacement of wildlife, however, wildlife would return within a short time period. There would be long-term benefits to wildlife habitat from watershed projects. Benefits include the enhanced vegetative condition in watersheds, increased surface water availability, improved condition of riparian-wetland areas, and greater wildlife abundance across several plant communities.

FIRE MANAGEMENT

Large wildfires would cause temporary impacts to wildlife habitat from the direct loss of vegetation that provides food and cover. In most cases, wildfires have long-term benefits to wildlife and habitat and are part of the natural ecological functions of many areas. Nutrients tied up in plant biomass are returned to the soil, forb production typically increases, grasses and some shrub species are invigorated. Habitat becomes more diverse, and vegetative mosaic and edge that is created contribute to species diversity. A shift would occur in wildlife species that prefer an early vegetation seral stage. Fire suppression activities would cause minimal impacts to wildlife habitat. Wildfires and suppression activities would temporarily displace wildlife species near the fires. There would be no significant loss of wildlife or habitat. Threatened or endangered plant species may be lost where wildfires occur in occupied habitat and when full suppression activities are conducted. Prescribed fires would similarly affect habitat in grassland, riparian, and pinon-juniper vegetative communities. Prescribed fires would have a long-term beneficial impact on habitat similar to that produced by wildfires.

IMPACTS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Overflow Wetlands ACEC

Minerals Management

About 1,040 acres would be open to future oil and gas leasing with no surface occupancy, giving protection to the 700 acres of wetland, the 170-acre buffer around the wetlands, and 170 acres of escarpment. The remainder of public lands in the ACEC would be open to future leasing subject to other surface use restrictions.

In areas of no surface occupancy, wetland habitat and wildlife populations in the ACEC and limited natural wetland habitat in the Pecos Valley would be protected. Wintering waterfowl populations would be maintained, and aquatic habitat for native fish species, including the Pecos pupfish, would be protected. In areas not covered by no surface occupancy, oil and gas development could cause, to some degree, the

loss of wildlife habitat, impair water quality by sedimentation or pollution of wetland habitat, cause a decline in waterfowl populations, and affect sensitive species.

The effects of mining salable and solid leasable minerals would be minimal. If mining did occur, temporary declines in air and water quality, temporary wildlife displacement and harassment, and the loss of habitat due to surface disturbance would be expected. Approvals for mining salable and solid leasable minerals are discretionary; mining would not be allowed where impacts would affect valuable resources. Closures of about 1,040 acres would afford additional protection of riparian/wetland and wildlife habitat.

Lands and Realty Management

The exclusion of major rights-of-way on about 3,000 acres of public land would result in long-term benefits. Benefits include the protection of riparian/wetland and wildlife habitat from major surface disturbing activities and human activities associated with maintaining ROW facilities. This would result in the protection of important waterfowl roosting areas and limit the possibility of harassment and displacement of wildlife that are dependent on the area.

The acquisition of 1,700 acres of state land and 2,100 acres of private land in the Overflow Wetlands ACEC would have major long-term benefits for numerous wildlife species dependent on riparian/wetland habitat for either all or part of their life cycle. Benefits include protecting riparian/wetland and aquatic habitat for wintering waterfowl, the Pecos pupfish, and numerous game and nongame wildlife species inhabiting the ACEC. Acquisitions would improve the manageability of the ACEC, enhance protection of riparian/wetland habitat, and allow for improving wildlife habitat through various projects. The result would be an increase in the abundance and distribution of numerous wildlife species. In addition, a portion of the lands overlooking the wetlands would be developed for the Watchable Wildlife program. Potential negative impacts could occur to the Overflow Wetlands state and private lands located in and adjacent to the ACEC were not acquired and were developed. Possible uses of the state and private lands could include mining, subdivision development, and off-highway vehicle use.

The acquisition of legal access to the Overflow Wetlands would resolve conflicts between private landowners and public land users, allow for the construction of wildlife habitat improvement projects, and provide legal public access to specific areas of public lands. The use of OHVs would be limited to designated roads and trails to reduce the potential for wildlife harassment.

Livestock Grazing Management

Public grazing leases or permits affecting about 3,000 acres of public land would be adjusted to improve habitat, primarily for wintering waterfowl. Long-term benefits would occur from all of these alternatives. However, the difference between the seasons of rest would change the magnitude of the positive impact. The longer the rest period from livestock grazing, the greater the chance for improving wildlife and riparian habitat.

Vegetation Management

The impacts of saltcedar control would cause temporary impacts to wildlife habitat from the direct loss of vegetation that provides food and cover. Minor surface disturbances also would occur, depending upon the vegetative control technique being used. In most cases, fires have long-term benefits to wildlife habitat and are part of the ecological functions of many areas. Chemical treatment could be used, as well. Smaller areas are treated when applying a chemical by hand as compared to aerial application, where the plant community would be changed on a larger scale. The magnitude of impacts would be dependent on the method of treatment. Long-term benefits from reducing saltcedar stands including allowing native plants to regenerate and improving water quality and water table levels.

Recreation Management

The Overflow Wetlands would be partially developed as a Watchable Wildlife area by constructing nature trails, and upgrading and signing existing access routes. The public would be directed to areas where visitation would cause minimal disturbance to wildlife and habitat.

Actual construction activities could cause temporary short-term displacement of local wildlife and seasonal waterfowl populations, but would be conducted during a period when wildlife would be least affected.

Construction of Watchable Wildlife facilities to further direct the public through the WHA, such as an observation overlook, rest rooms, picnic tables and parking areas, is dependent on acquisition of the private lands adjacent to State Road 42. If the lands are acquired, there would be a loss of about two acres of grassland habitat for the facilities mentioned above. Wildlife species would be temporarily displaced from the area but would return after construction ceased.

Long-term benefits would be increased public awareness of riparian/wetland habitat and management through environmental education, viewing opportunities of waterfowl and shorebirds that are non-disruptive to the birds, and protection of the wetlands from indiscriminate travel throughout the WHA.

An OHV closure would result in the direct protection of about 1,040 acres of riparian/wetland habitat. The use of OHVs would not be allowed on specific roads that lead to the wetlands, to avoid damage to riparian/wetland areas and harassment of waterfowl on isolated ponds. Impacts from OHV use would be minimized on about 2,100 acres of the remaining public lands in the ACEC by limiting travel to designated roads and trails, to reduce unnecessary resource damage and harassment of waterfowl and wildlife. The protection of 170 acres (included in the 1,040 acres closed to OHV use) of escarpment overlooking the wetlands is dependent upon the acquisition of the private lands adjacent to State Road 42. Benefits include preserving fragile wildlife habitat on the escarpment and the limiting waterfowl harassment on several ponds below the escarpment.

Development of controlled public fishing opportunities would cause only minor impacts to wildlife and habitat. Appropriate signing, designations and public education would help reduce impacts to riparian habitat condition resulting from littering, camping, OHV use in and along the river, shooting, vandalism of range and wildlife improvements, unauthorized removal of vegetation, and harassment of wildlife. Long-term benefits would be the isolation of adverse recreational impacts to the developed sites. Closing the WHA to minnow seining would benefit to the Pecos pupfish over the long term by eliminating any accidental taking of the pupfish.

Wildlife Habitat Management

The development of 300 acres of additional wetland habitat would have long-term benefits to waterfowl, shorebirds, and aquatic plant and animal species. Benefits would be additional open water for waterfowl use, increased waterfowl and shorebirds, increased riparian/wetland habitat, and enhanced biological diversity of the area. Short-term impacts include surface disturbance and wildlife displacement during the construction of berms and dikes, and the modification of channels. The acquisition of water rights would have long-term positive impacts, resulting in the expansion and enhancement of riparian/wetland and waterfowl habitat.

Fire Management

Wildfires and suppression activities would temporarily displace wildlife species. There would not be a significant loss of wildlife and habitat. To eliminate riparian/wetland habitat disturbances, heavy equipment would not be used to construct fire lines. To protect aquatic habitat for the Pecos pupfish, retardant would not be used to suppress fires unless extreme circumstances dictate its use.

North Pecos River ACEC

Oil and Gas Management

There would be no negative impacts to wildlife and habitat from future oil and gas leasing in the ACEC because of leasing closures and no surface occupancy restrictions. The long-term benefits would be the protection of limited riparian/wetland habitat in the Pecos Valley and the protection of aquatic habitat for native fish species, including the Pecos bluntnose shiner. Possible direct impacts from development could include the loss of wildlife habitat, impaired water

quality from sedimentation or pollution of riverine habitat, and declines in wildlife populations. Development of existing leases would be guided by surface use and occupancy restrictions, and negative impacts would be mitigated.

Other Minerals Management

About 4,200 acres in the North Pecos River ACEC would be protected by closure from salable and solid leasable mineral mining. Long-term benefits to riparian/wetland and wildlife habitat would result, including protecting riparian/wetland and wildlife habitat for a variety of wildlife species, primarily the Pecos bluntnose shiner and mule deer. Important Pecos River riparian habitat and associated uplands would be protected, and water quality of the Pecos River would remain unchanged by mining. Harassment and displacement of wildlife species from mining would be avoided.

Lands and Realty Management

Locating major rights-of-way would be avoided on about 3,360 acres. Benefits of avoidance include protecting riparian/wetland and wildlife habitat from surface disturbing activities and human activities associated with maintaining ROW facilities. Riparian areas, relic cottonwood groves, and aquatic habitat for the Pecos bluntnose shiner and other native fish would be protected. Harassment and displacement of wildlife species that are dependent on the relatively undisturbed habitat conditions at the ACEC would be limited. A potential negative impact would be the possibility of rights-of-way being allowed in the ACEC in the event no other routes around the ACEC were available. Other impacts include riparian habitat loss from construction in the right-of-way, loss of relic cottonwood tree groves, potential sedimentation of the Pecos River from construction activities, displacement and harassment of wildlife species from improved access in the ACEC, and human activity during the maintenance of the ROWs.

The acquisition of 1,160 acres of state land and 1,880 acres of private land in the ACEC would have major long-term benefits for the riverine riparian area and the numerous wildlife species that use riparian, aquatic, and upland habitats found in the ACEC, for either all or part of their life cycle. Benefits include protecting aquatic habitat for the Pecos bluntnose shiner and other native fish species, upland habitat for mule deer and upland game birds, and riparian habitat for numerous game and nongame wildlife species. Acquisitions would improve the manageablity of the ACEC, enhance protection of riparian/wetland habitat, and allow for the improvement of wildlife habitat through various range and wildlife projects. An increase in the abundance and distribution of numerous wildlife species associated with the Pecos River and adjacent upland habitat would result. The surface or subsurface development of state and private lands located in and adjacent to the ACEC could result in negative impacts. Potential impacts could include the mining of saleable, locatable and leasable minerals off-highway vehicle use, grazing practices incompatible with riparian area rehabilitation, vegetative manipulation projects, and other unforeseen activities affecting the quality of riparian, aquatic and wildlife habitat in the ACEC.

The acquisition of legal access to the ACEC would resolve conflicts between private landowners and public land users, allow for the construction of wildlife habitat improvement projects, and provide the public with legal access to public lands. The use of OHVs would be limited to designated roads and trails to reduce the potential for wildlife harassment.

Livestock Grazing Management

Public grazing leases or permits affecting about 3,360 acres of public land would be adjusted to improve riparian and upland habitat in the ACEC, resulting in long-term benefits. The magnitude of benefits would vary according to adjustments in the seasons of rest and stocking rates. The longer the rest period from livestock grazing coupled with an adjustment in stocking rates for pastures supporting riparian habitat, the greater the chance for improving riparian habitat in a shorter period of time. Habitat improvement would result in greater wildlife diversity, abundance and distribution throughout the ACEC.

Vegetation Management

Saltcedar control on about 600 acres by prescribed fire, mechanical methods or chemical treatment would cause temporary impacts to wildlife habitat from the direct loss of vegetation in treatment areas, and minor surface disturbance from fire fighting equipment and vehicles. In most cases, fires have long-term benefits to wildlife habitat and are part of the ecological functions of many areas. Reducing saltcedar concentrations allows for native plants to regenerate, improves water quality and water table levels. If chemicals are used, smaller areas would be treated because chemicals would be applied by hand, rather than aerially.

Recreation Management

About 3,360 acres of public land in the ACEC would be protected from OHV use by limiting travel to designated roads and trails. Long-term benefits would be the protection of riparian and upland wildlife habitat, and the maintenance of wildlife abundance and distribution within the ACEC.

Closing the ACEC to minnow seining would benefit the Pecos bluntnose shiner population by eliminating any accidental taking of the shiner.

Mescalero Sands ACEC

Lands and Realty Management

Acquiring private and state lands would have positive long-term impacts to wildlife habitat management. Positive impacts include improved manageability of wildlife habitat, protection of big game and upland game habitat, and potential for increasing wildlife abundance and distribution through habitat enhancement in the area of acquisitions.

Livestock Grazing Management

Eliminating the existing livestock grazing exclusion and allowing continued, controlled livestock grazing would have minimal negative impacts to wildlife habitat. Wildlife disturbance from ranching operations would exist at times. Unneeded pasture fences would not be maintained and would eventually be eliminated by shifting sands.

Recreation Management

Off-highway vehicle use restrictions would benefit big game and upland game habitat, sage dune lizard habitat, and nongame bird species. The ACEC would be protected from undue vehicle damage. Important big game and upland game habitat areas and critical habitat for the sand dune lizard would be protected. Wildlife abundance and distribution would be enhanced over the ACEC.

Fort Stanton ACEC

Minerals Management

About 24,630 acres would remain withdrawn from the general mining laws and closed to solid minerals leasing, resulting in long-term benefits to wildlife habitat by the protection of critical habitat for Kuenzler hedgehog cactus; important mule deer, pronghorn antelope, Mearn's quail and elk habitat; significant riparian/wetland areas, and aquatic habitat on the Rio Bonito and Salado Creek.

Minimal impacts are expected from mineral material disposal because pits would be located in areas that would not be in conflict with wildlife habitat management objectives. If pits were opened, direct impacts would be minor, short term, and result in the loss of habitat when pits are opened. Indirect impacts would be wildlife displacement at mining sites, and within a half-mile of each operation and within a quarter-mile of each access road, when mining is actually occurring. Depending on pit location, potential increased sediment loading into the Rio Bonito could occur, resulting in decreased water quality and fish habitat.

Lands and Realty Management

About 24,630 acres would be excluded from the location of major rights-of-way, resulting in long-term benefits to wildlife habitat by the protection of critical habitat for Kuenzler hedgehog cactus; important mule deer, pronghorn antelope, Mearn's quail and elk habitat; significant

riparian/wetland areas, and aquatic habitat on the Rio Bonito and Salado Creek.

Small-scale rights-of-way would be allowed at Fort Stanton on a case-by-case basis and may conflict with wildlife resources such as big game and upland game habitat, riparian areas, fish habitat, springs and seeps, and Kuenzler hedgehog cactus habitat. Short-term negative impacts include direct habitat loss from construction activities and wildlife displacement during construction. Long-term negative impacts may include wildlife disturbance and habitat degradation as a result of improved public access into undisturbed wildlife habitat, loss of wildlife habitat improvement projects, access into critical habitat for Kuenzler hedgehog cactus, loss of riparian vegetation and stream channel alterations, disturbances to caves, and continued human activity during right-of-way maintenance.

The acquisition of up to 1,480 acres of private and state lands would have long-term benefits to wildlife habitat management. Benefits include improved manageability of wildlife and fish habitat, protection of riparian areas and big game habitat, and the potential for increasing wildlife abundance and distribution through habitat enhancement.

Livestock Grazing Management

The use of livestock grazing to treat vegetation would have long-term benefits to terrestrial wildlife habitat, aquatic habitat, riparian areas, and Kuenzler hedgehog cactus habitat. If warranted, livestock grazing would be authorized when consistent with wildlife habitat management goals and objectives, and could be modified as needed. An improvement of wildlife, aquatic, and riparian habitats, and protection of cactus habitat would be expected, resulting in increased wildlife habitat diversity, plant diversity, and wildlife distribution and abundance.

Vegetation Management

Saltcedar control would cause temporary impacts to wildlife habitat from the direct loss of vegetation that provides food and cover, and from minor surface disturbances depending upon the vegetative control technique being used. In most cases, fires have long-term benefits to wildlife habitat and are part of the ecological functions of many areas. Reducing saltcedar concentrations by prescribed fire, mechanically, or with chemicals allows native riparian plants to regenerate, and improves water quality and water table levels. Treatment areas where chemicals are use would be small because the chemicals would be applied by hand. Chemical application would not affect wildlife habitat.

Recreation Management

Upgrading and maintaining existing recreation facilities would cause minor habitat loss within the designated recreational areas and trails. Upgrading the sites would promote visitation. Recreationists would disperse to adjacent wildlife habitat areas to pursue various recreational activities. The short-term negative impact would be an increase in wildlife disturbance and displacement in the area during upgrading and maintenance activities, with wildlife returning after activity ceases. There would be no significant impacts to wildlife and habitat at the Fort Stanton Cave Campground, because the focus of activity is on the cave.

Adding multi-use trails to the existing 40 miles of trails at Fort Stanton would not have significant impacts to wildlife and habitat, In terms of habitat loss, because the new trails are mainly existing roads and trails. Promoting the trail system would potentially increase human activity throughout Fort Stanton and cause wildlife disturbance and displacement along the trails, potential loss of Kuenzler cactus from off-trail riding in critical habitat, and potential conflicts between trail users and hunters. Long-term benefits may include greater public awareness of wildlife habitat and riparian area management at Fort Stanton, enhancement of the Watchable Wildlife initiative, and the potential for implementing habitat improvement projects using volunteer trail user groups.

Camping restrictions to protect riparian areas and livestock and wildlife waters would have long-term benefits to wildlife and habitat. Benefits include protection of riparian vegetation and water quality, protection of watering sources for wildlife, a decrease in wildlife harassment, and an increase in wildlife abundance in the vicinity of riparian areas and water sources.

Off-highway vehicle use restrictions would result in long-term benefits to riparian areas along the Rio Bonito, Salado Creek, springs and seeps, big game and upland game habitat, and to Kuenzler hedgehog cactus habitat. Benefits are the preservation of riparian areas from undue vehicle damage, protection and seclusion of important big game and upland game habitat areas, protection of critical habitat for Kuenzler cactus, decreased upland erosion and sedimentation of aquatic habitat, and enhanced wildlife abundance and distribution over the entire Fort Stanton area.

The development of a wayside would result in direct habitat loss of about two acres for access and facilities, potential noise and visual disturbance to a resident pronghorn antelope herd from human activity, and potential riparian habitat degradation. The development of two overlooks would result in direct habitat loss of about two acres for access and parking facilities and wildlife harassment from visitation and visual intrusions into undisturbed wildlife habitat. The long-term negative impacts would be the decline of big game habitat conditions and wildlife harassment at both sites resulting from increased human activity. At the north overlook site, potential negative impacts from collecting and trampling may occur to Kuenzler hedgehog cactus in the vicinity of the site. Long-term benefits from the wayside and overlooks include greater public awareness of wildlife habitat, T&E species, and riparian area management at Fort Stanton through interpretive programs at these sites. There would be minor impacts to wildlife habitat from the development of an interpretive site at the Lower Stanton Pueblo Ruin.

An extended annual seasonal closure from November 1 through April 15 would have long-term benefits to bat populations at Fort Stanton Cave. The bat hibernacula would be protected from life-threatening human disturbances.

Wildlife Habitat Management

Big game and upland game and native and game fish transplants and reintroductions would benefit wildlife and fish populations at Fort Stanton. Improved distribution and enhanced gene pools of game species would contribute to more viable wildlife populations at Fort Stanton, especially when coupled with wildlife habitat improvement projects.

Riparian and aquatic habitat improvement projects would produce long-term benefit to wildlife and fish species dependent on these areas. Benefits include stabilized stream channels, decreased sedimentation, enhanced native riparian vegetation, increased fish habitat diversity and populations, increased forage production for wildlife, and an overall increase in wildlife use and abundance in and adjacent to riparian areas.

Fire Management

Prescribed fire would be used in pinon-juniper, riparian and grassland community types. Prescribed fires would cause temporary impacts to wildlife habitat from the direct loss of vegetation that provides food and cover. The long-term benefits of prescribed fire include enhancing riparian vegetation and vigor of grass species, controlling invading junipers, increasing infiltration of surface water, improving water quality and prolonging base flows. Nutrients tied up in plant biomass are returned to the soil, forb production typically increases, grasses and some shrub species are invigorated, habitat becomes a more diverse vegetative mosaic, and edge that is created contributes to species diversity. Terrestrial wildlife and aquatic species diversity and abundance would increase in areas of treatment.

Wildfires and suppression activities would temporarily displace wildlife species in the vicinity of the fire. There would be no significant loss of wildlife or habitat. Threatened or endangered plant species may be lost where wildfires occur in occupied habitat and when full suppression activities are implemented. To protect Kuenzler cactus at Fort Stanton, full suppression activities would be employed, but heavy equipment would not be used to construct fire lines.

Roswell Cave Complex ACEC

All prescriptions for the proper management of the nine caves in the ACEC would have long-term benefits for cave-adapted wildlife, specifically wintering bat populations. Protection

is accomplished by mineral closures and withdrawals affecting about 15,000 acres in the ACEC, prohibiting the use of carbide lamps, constructing fence exclosures around cave entrances, and limiting wildfire suppression activities.

Expected social impacts addressed in this document are identified as changes in well-being. The decisions ultimately made as a result of this RMP/RMPA may affect individuals and groups. Changes in the amount and quality of resources and the allocation of those resources for a variety of uses could result in a social impact. In addition, decisions could affect the availability of resources, thereby affecting the income of individuals or companies. The intensive management of public lands and resources may be construed in many cases to mean restrictions and limitations. While this may be the case, in general, no sole group of users is singled out in the proposed plan. The effects on social well-being are expected to be minimal.

MINERALS MANAGEMENT

The discussion of impacts to oil and gas, near the beginning of this chapter, also contains analysis of economic impacts.

The mining industry in the Roswell District provides about 8,200 jobs. This is the fifth largest industry by income in the District and the fourth largest employer. Almost all this income is money coming into the area where it is distributed as taxes, retail sales, and wholesale receipts for the benefit of all citizens.

The Roswell District encompasses about 13.965 million acres of federal mineral (oil and gas) estate. The Roswell Resource Area contains about 9.74 million acres and the Carlsbad Resource Area contains about 4.1 million acres. Over the three fiscal years, 1993 to 1995, an average of 24,155 acres in the Roswell Resource Area and 70,957 acres in the Carlsbad Resource Area have been leased. Average revenues from bonus bids and rentals during the same period were $457,000 and $7.5 million per year, respectively. The amount of acreage proposed for closure to leasing for oil and gas in the Roswell District is a small percentage of the federal mineral estate available for leasing. Revenues to the federal treasury from bonus bids and rentals should not change appreciably from the current situation under the proposed plan.

The amount of acreage to which restrictions are applied under the proposed plan should not change dramatically from current conditions. Any restrictions imposed by the BLM on exploration, drilling, or production may increase costs for developing oil and gas. In the extreme, restrictions could cause a decrease in federal receipts and the revenues available for sharing with state and local governments because companies would decrease their development and production activities. However, it is expected that exploration, development, and production activities will more likely be influenced by outside factors, such as the price of oil and gas, rather than the cost of added restrictions. The additional costs resulting from restrictions are related primarily to additional surface protection and are expected to be a small percentage of the total cost of developing oil or gas wells. Appendices 3, 4, and 5 describe Surface Use and Occupancy Requirements, the Roswell District Conditions of Approval, and Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas.

Surface use requirements are essentially modifications of requirements already in effect under current management. These requirements may include relocating a drill site, which should have minimal or no cost, if the move is done before surveying and cultural inventories are conducted. The impact of having to resurvey a drill site can be mitigated by better coordination between operators and the BLM, including better planning and more advance notice of intentions on the part of the operator.

Impact mitigation, such as installing caps on treater stacks or constructing a berm around a tank battery, can add to development costs, but are inexpensive when compared to the overall cost of drilling or the potential cost of remediating damage. Timing restrictions could create an economic impact by disrupting drilling plans or causing drilling rig downtime. Timing delays sometimes affect rig availability and create scheduling difficulties. This situation can be mitigated through better advance planning and contact with the BLM by operators anticipating a drilling program located in prairie

chicken habitat, where timing requirements are applied. Increased downhole costs over the current situation should be rare, unless drilling occurs in a cave or karst area where specific downhole mitigation is required as a result of cave and karst drilling practices.

Locatable Minerals

The economic contribution of mining locatable minerals is not expected to be significant, unless there is an unforeseen change in the demand for certain minerals or an unexpected discovery of minerals. While there are currently a substantial number of mining claims in the Roswell Resource Area, the mining activity on those claims is minimal. (Table 93, Draft Roswell RMP/EIS.) Under current law, no royalty is paid on the extraction of federal locatable minerals. The payment of annual assessment fees to keep mining claims current provides a source of revenue to the federal treasury. Any other economic return from mining is tied to such things as wages paid, the purchase of equipment and supplies, and the payment of taxes on equipment, property, and income.

Solid Leasable Minerals

The development of solid leasable minerals from federal leases in the Carlsbad Resource Area generated over $4.4 million in 1992 in Eddy and Lea counties, with the majority from the world-class deposits of potash. With approximately 497,000 acres located within the Carlsbad Known Potash Leasing Area boundary, $8.85 per acre was generated from these lands.

The leasing and development of potash affects opportunities for oil and gas drilling in some areas. Leases held by oil companies may be affected because some areas of a lease may be excluded from drilling due to conflicts with potash mining. This may cause an economic impact to the oil and gas industry because of the inability to recover all available oil and gas reserves lying below the potash zones. However, the mitigation of economic and other impacts to the oil and gas industry resulting from the leasing of potash are beyond the purview of this land use plan.

Mining of solid leasable minerals in the Roswell Resource Area is essentially nonexistent, although a small amount of exploration for sulfur has occurred. The leasing of solid minerals can produce revenue in the form of royalties and create employment.

Salable Minerals

The demand for mineral materials is generated primarily by the oil and gas industry. Salable minerals, mostly caliche and small amounts of sand or gravel, are used by the oil and gas industry for surfacing drilling and production pads, and access roads. That demand, and the economic benefit that results, are expected to remain fairly constant. The revenue from the sale of mineral materials in the Roswell Resource Area annually amounts to about $25,000. In the Carlsbad Resource Area, the annual sales of mineral materials amounts to about $350,000. The BLM also provides free use of mineral materials to local governments for road construction purposes. Mineral materials disposed of annually under free use permits in the Roswell Resource Area amounts to about 160,000 cubic yards worth about $75,000. The availability of these materials is an economic benefit to local governments whose limited operating funds are derived from taxes and other sources. Individuals also purchase mineral materials at low cost from community pits, which can be viewed as an economic benefit because it provides a source of low cost, unprocessed mineral material for the general public.

LANDS AND REALTY MANAGEMENT

The acquisition or disposal of public lands through exchanges or sales could produce an economic impact, although in many cases the impact would be minimal. Lands currently in public ownership are not taxed by local governments, but the lack of tax revenue from public lands is offset by payments in lieu of taxes (PILT). Lands acquired for public ownership could cause a reduction in the local tax base if PILT payments are lower on a per acre basis than tax revenue. Lands leaving public ownership would be taxed at local rates,

giving local government the possibility of an increased tax base. In the case of undeveloped rangeland, however, monies from PILT may actually exceed the revenue generated by local taxation. Counties and other taxing entities gaining land converted from public ownership may actually receive less revenue per acre than before. Table 3-17 (in the Proposed Plan/EIS) lists PILT payments for 1994 to counties located in the Roswell Resource Area.

If the disposal of land is by exchange, acreage of equal monetary value is traded, so the loss of higher value private lands for lesser value public lands should not cause a significant shift in tax or PILT revenue to local governments, unless the lands acquired by the BLM are not in the same county as the disposed lands. In that case, one local government could lose tax base because the PILT would be less than the taxes generated from highly valued land. The county acquiring public land would increase its revenue as a result of adding additional acreage to its tax rolls.

The majority of lands identified for consideration for disposal are located in Lincoln County and are tied to completion of the Rio Bonito exchange. Most of these lands are rangelands for which PILT is equal to or greater than the per acre tax revenue for similar private lands. If these lands are transferred to private ownership, Lincoln County could receive reduced revenue, based strictly on land value, not including any taxes paid on livestock or improvements.

The direct benefits of land disposal affect both the BLM and landowners. The BLM is able to reduce the amount of isolated, hard to manage public lands in its inventory, which should result in a savings in cost of management of those parcels. When the disposal involves an exchange, the BLM gains important lands to further its management objectives and policies. A common secondary benefit of the acquisition of high quality land is an increase in recreation use, which may translate into increases in user fees and expenditures in nearby communities for lodging, fuel and food.

When ranchers or farmers acquire adjacent public lands through exchange or direct purchase, they are potentially able to improve their economic situation by reducing the cost of managing land under two ownerships, by increasing management efficiency, and by having a larger land base from which to produce livestock, forage or crops. If land is disposed of to individuals who develop the land for industrial, business or residential purposes, the economic impacts generally are beneficial to local governments because of a substantially increased tax base and to the developer who hopes to make a profit on the development.

The disposal of as many as 150,000 acres would result in a permanent loss of annual grazing receipts from approximately 34,260 AUMs, which amounts to approximately 10 percent of the current permitted AUMs in the Roswell Resource Area. Based on current grazing fees, this would amount to an annual reduction of nearly $62,000 in grazing fees collected in the resource area. At the same time, the BLM's land management costs, including administration of livestock grazing, could be reduced as a result of the disposal of small, isolated tracts of land that are difficult or uneconomical to manage. It is difficult to put a specific value on these costs as they are part of efficiencies that may be gained, including redistribution of work hours, travel, and vehicle costs.

The Taylor Grazing Act established certain grazing districts. Public lands within these districts are permitted for grazing. Grazing fees collected from these lands are deposited with the U.S. Treasury. Fifty percent of these fees is returned to the district of origin specifically for range improvements, 37.5 percent is retained by the Treasury and 12.5 percent is distributed to the state. Lands located outside the grazing districts are leased. Fifty percent of the grazing fees collected from lands outside the grazing district is returned to the state for use in the counties. If the lands identified for disposal leave public ownership, the State of New Mexico would lose the grazing-related income from those lands. However, these payments to the state may be offset by property taxes paid to the counties by the new landowners.

Grazing allotment holders could be adversely affected if land uses change, or if lands are sold or exchanged with someone other than the

allottee. Benefits would be expected if the land sold or exchanged becomes private property of the grazing allotment holders already using the land.

Fees and rentals collected for authorizations such as rights-of-way are deposited in the U.S. Treasury. During the period from May 1, 1993, through May 1, 1994, approximately $144,000 was collected in the Roswell Resource Area from filing fees and rentals.

LIVESTOCK GRAZING MANAGEMENT

Approximately 70 percent of the agricultural receipts in the counties of Chaves, Guadalupe, Roosevelt, Lincoln, Curry, De Baca, Quay, Lea, and Eddy in 1988 came from livestock production. From 1986 through 1993 the average annual receipts from livestock production on all land ownerships in the first seven counties listed was $324,171,125 per year. This value excludes revenues generated by dairies and feedlots. Actual payments in fiscal year 1993 to the U.S. Treasury were about $620,000, from livestock producers in the Roswell Resource Area using public land for 329,468 AUMs of licensed grazing use. Fifty percent of these revenues were returned to the state. Additional livestock revenue data for southeast New Mexico is summarized in Table 4-1.

Vegetation treatments would require a period of rest to accomplish successful treatment. Rest periods could possibly cause short-term economic impacts to livestock producers. However, those impacts would be offset by increased forage production and a potential increase in stocking rates after two years.

When the Billy the Kid recreation site, eighty acres in De Baca County, is developed, grazing would be eliminated, resulting in the elimination of 12 AUMs (for one cow, yearlong). The loss of vegetation due to surface disturbance from oil field development and other activities would continue to affect the amount of forage available for livestock grazing. However, reductions in carrying capacity resulting directly from surface disturbance have not been made in the past and are not expected to be made in the future, in most situations. Thus, there is negligible economic impact to livestock operations from surface disturbance.

Management proposed for the Overflow Wetlands ACEC would require the cancellation of grazing in one allotment, a reduction of 119 AUMs. Livestock grazing in the Mescalero Sands ACEC would not be excluded from the ACEC, but grazing preference would not be established for the area excluded from grazing under current management. As many as 144 AUMs could be affected by proposed management of the ACEC. Grazing in the Fort Stanton ACEC would continue as a tool for vegetation management. No grazing preference has been, or will be, established. Grazing at Fort Stanton has been permitted under a system where forage is sold by means of a bidding system; the use of AUMs is granted to the high bidder for each pasture. The bid price varied from a minimum of $5.00 per AUM to $16.38 per AUM for the 3,015 AUMs available in the 1993/1994 contract period. This process may be considered for use in the future. If employed, it is expected that bids would be similar to those offered in the past.

OUTDOOR RECREATION MANAGEMENT

The tourist industry provides about 5,100 jobs and generates $118,262,000 per year in the Roswell Resource Area for lodging and restaurants. Each visitor spends an estimated $95 per visitor day. Recreation-related visitation has been increasing at a rate of about 7 percent annually. Proposed development of the Rio Bonito acquired lands and the continued improvement of facilities at Valley of Fires and Fort Stanton should lead to increase local revenue from recreation visitation. Day-use developments at the Billy the Kid recreation site, the Gamsey Bison Kill site, and Overflow Wetlands likely would not produce much economic impact, if any, because of the nature of the development.

Further development of off-highway vehicle (OHV) use areas at Mescalero Sands and Haystack Mountain could be expected to

TABLE 4-1
SOUTHEAST NEW MEXICO
AVERAGE LIVESTOCK RECEIPTS[1/], 1986-1993

County	Total Area, Acres	BLM Area, Acres	Percent BLM	Total livestock receipts $ X 1000	Cattle/ calves receipts $ X 1000	Sheep receipts $ X 1000	Cattle & sheep receipts $ X 1000	Total livestock receipts, $/acre	Cattle & sheep receipts $/acre
Chaves	3,225,000	872,000	27.04	115,439	44,936	4,323	49,258	35.79	15.27
Curry	883,000	2,000	0.23	81,154	72,227	53	72,281	91.91	81.86
De Baca	1,479,000	43,000	2.91	16,170	15,384	401	15,785	10.93	10.67
Guadalupe	1,950,000	50,000	2.56	18,186	17,059	859	17,919	9.33	9.19
Lincoln	3,083,000	516,000	16.74	17,945	15,139	2,335	17,475	5.82	5.67
Quay	1,787,000	2,000	0.11	27,606	26,681	52	26,733	15.45	14.96
Roosevelt	1,558,000	5,000	0.32	47,672	23,506	92	23,597	30.60	15.15
TOTALS	13,965,000	1,490,000	10.67	324,171	214,932	8,116	223,048	23.21	15.97

[1/] Revenues generated by dairies and feedlots are not included in this table.

Source: New Mexico Agricultural Statistics, 1988, 1990, 1991, 1993. New Mexico Agricultural Statistical Service in conjunction with the New Mexico Department of Agriculture and New Mexico State University.

increase sales of fuel in Roswell and other towns in the area, as more OHV use is encouraged at those sites. Greater restrictions on OHV use in the remainder of the resource area would affect social and economic conditions, but the actual effect is difficult to estimate. The restrictions should help control or reduce resource damage, which would reduce the economic costs of that damage, such as soil erosion and vegetation loss, that are borne by the general population. The freedom of OHV use would be somewhat limited, affecting those recreationists who rely heavily on OHVs. Vehicle use restrictions also would affect business-related use of OHVs to an extent, although permitted uses (such as that related to livestock management or oil and gas exploration) may be exempted from some restrictions.

The more intensive management of wildlife habitat, especially in areas covered by habitat management plans, would contribute to the increase in the size and vigor of wildlife populations. Wildlife habitat improvement projects could provide some collateral benefit to livestock grazing. But, at the same time, ranchers may view the improvement of habitat with an attendant increase in wildlife as a negative accomplishment, because of the potential increase in competition with livestock for forage. More wildlife benefits recreation and businesses related to recreation. Additional hunting can also be accommodated as wildlife populations grow.

The intensive management of cultural resources not only protects those resources, but indirectly provides an opportunity for an economic benefit related to visitor use of those areas. While most use is expected to be day use, a limited amount of economic activity may be generated.

CHAPTER 5:
CONSULTATION AND COORDINATION

INTRODUCTION

Resource specialists in the Roswell and Carlsbad resource areas prepared the Roswell Resource Management Plan (RMP) and the Carlsbad Resource Management Plan Amendment (RMPA). The environmental impact statement (EIS) for the two RMPs was prepared primarily by staff in the Roswell Resource Area. Table 107 in the Draft RMP/RMPA/EIS lists the principals in the preparation of this plan. Numerous other individuals from the resource areas, district and state offices, as well as other federal, state, county representatives, and public individuals provided valuable assistance in the formulation of this plan. The Roswell District Office and New Mexico State Office management teams and resource program leaders provided technical and policy reviews.

Consultation, coordination, and public involvement have occurred throughout the planning process through scoping meetings, informal meetings, individual contacts, news releases, and *Federal Register* notices.

Initial steps in the planning process began in 1988, with the development of a preparation plan. Other early efforts included research, inventory, analysis, and interagency coordination.

PUBLIC PARTICIPATION

A public participation plan was prepared to provide management and team guidance for developing the resource management plan and environmental impact statement, and to ensure public involvement during the entire resource management plan and environmental impact statement preparation process. Both formal and informal input have been encouraged and used in the preparation of the RMP and RMPA.

A notice published in the *Federal Register* on August 25, 1989, announced the intention of the BLM to prepare a resource management plan and requested information on resources and proposed future uses of resources in the Roswell Resource Area. Letters and a news release requesting the participation of persons and organizations who wanted involvement in the planning process were mailed in October 1989.

A letter was mailed in December 1989, requesting information and comments on preliminary issues and concerns which would guide the preparation of the Roswell Resource Management Plan. A notice published in the *Federal Register* in January 1990, announced the call for coal and other resource information.

Public scoping meetings were conducted with: Lincoln County Commissioners, September 10, 1990; DeBaca County Commissioners, September 11, 1990; City Officials of Santa Rosa, September 11, 1990; Chaves County Commissioners, September 13, 1990; Eddy County Commissioners, September 18, 1990; Quay County Commissioners, September 24, 1990; City Officials of Carrizozo, September 25, 1990; Roosevelt County Commissioners, October 1, 1990; Curry County Commissioners, October 2, 1990; and, City Officials of Roswell, October 9, 1990.

A *Federal Register* notice published on June 13, 1991, announced the Carlsbad Resource Area was initiating the preparation of a resource management plan amendment (RMPA). The resource management plan amendment and environmental impact statement (EIS) would be prepared in conjunction with the Roswell Resource Management Plan.

Open houses were held during July 1991, in Roswell, Hobbs, Capitan and Carlsbad, New Mexico. A questionnaire and description of planning issues were handed out; more than 100 responses were received from the public.

The Roswell District Advisory Council was apprised of progress on the RMP, and comments and recommendations of the members have been solicited.

The BLM's personnel met formally and informally with many members of the ranching and minerals industries and with other interest groups. A summary of comments generated from these meetings is maintained at the Roswell Resource Area Office.

Meetings were held in 1992, to discuss the concept of desired plant community (DPC) and to explain the development of the DPC process proposed for the Roswell RMP. Community meetings were held in Vaughn, Elida, Capitan, Artesia, and Roswell. Briefings were held in Roswell with members of the Roswell District Grazing Advisory Board, Roswell District Advisory Council, New Mexico Department of Game and Fish, representatives of environmental organizations, such as the Sierra Club, and with BLM representatives from the New Mexico State Office. Members of the New Mexico Range Improvement Task Force were briefed during a meeting in Las Cruces.

Early in 1993, three citizen work groups were formed to assist RMP team members in the development of planning alternatives. These work groups reviewed preliminary alternatives, and provided advice and recommendations on the further development of the alternatives. Table 108 in the Draft RMP/RMPA/EIS lists the members of these groups.

Information regarding special status species was requested from the U.S. Fish and Wildlife Service on December 12, 1991, which began the informal consultation process. Also, information was requested from the New Mexico Energy, Minerals and Natural Resources Department, and the New Mexico Department of Game and Fish. The data was used and the lists of special status species are found in Appendixes 16 and 17.

The BLM will continue consultation and coordination under the Endangered Species Act, by preparing a biological assessment for threatened and endangered species as part of Section 7 consultation. The BLM will complete the Section 7 consultation process prior to the approval of the Record of Decision. The BLM's anticipated "is not likely to adversely affect" determination is based on the use of practices that eliminate impacts or produce beneficial effects, such as leasing stipulations, lease notices, surface occupancy requirements and conditions of approval, impact assessments, and agency coordination prior to site-specific federal actions.

Public contacts made since the Draft RMP/RMPA/EIS was published:

Copies of the Draft RMP/RMPA/EIS were mailed to a large number of individuals, companies and businesses, organizations, and agencies, beginning in the latter part of October, 1994. The 90-day public comment period began on November 1, 1994. The public comment period

was later extended until March 1, 1995, giving 120 days for review and comment. The list of those receiving the plan is maintained at the Roswell District Office.

The County Commissions of the seven counties in the Roswell Resource Area and the three counties in the Carlsbad Resource Area (Chaves County is included in each resource area) were offered opportunities for briefings on the Draft RMP/RMPA/EIS after it was published. Likewise, numerous organizations, such as service clubs and user groups, were offered briefings. Among those, briefings were provided to the Southeast New Mexico Grazing Association, and the Optimist and Rotary clubs in Roswell.

Public open houses to informally discuss the Draft RMP/RMPA/EIS were held January 3, 1995, in Ruidoso, January 4, 1995, in Carlsbad, and January 5, 1995, in Roswell. Formal public hearings were held January 10, 1995, in Roswell, and January 11, 1995, in Carlsbad.

Briefings on the status of the development of the Draft RMP/RMPA/EIS were provided to the New Mexico Oil and Gas Association's Roswell District Working Group during their meetings with the BLM on October 26, 1994, July 13, 1995, February 28, 1996, June 13, 1996, and November 7, 1996.

Local BLM staff met with representatives of the Sierra Club, Audubon Society, and other related groups on February 18, 1995, in Roswell.

Local BLM staff met with Bud Eppers, President of the Southeastern New Mexico Grazing Association and several members of that group on March 29, April 3, and May 17, 1995, to discuss the concerns of the Association.

Briefings on the RMP were provided to the Chaves County Public Lands Advisory Committee on February 23, 1995, October 16, 1996, and December 18, 1996. Similar briefings were presented to the Eddy County Land Use Committee on January 23, 1995, and April 24, 1995.

Local BLM staff discussed the RMP/RMPA/EIS at a meeting of the Permian Basin Petroleum Association in Midland, Texas, on January 26, 1995. A similar discussion was held in Midland on February 9, 1995, with representatives of Santa Fe Energy. Local BLM staff also met with representatives of Chevron Oil on February 15, 1995, and Amoco Oil on February 16, 1995, in Roswell.

Local BLM staff met with U.S. Congressman Joe Skeen and representatives of Southeastern New Mexico oil and gas companies on July 5, 1995, in Roswell, to discuss industry concerns with the Draft RMP/RMPA/EIS.

A copy of the Draft RMP/RMPA/EIS on computer disk was provided to Greg Nibert of the Hinkle, Cox, Eaton, Coffield and Hensley law firm in December, 1994, to aid in review and comment of the plans. The disk was provided to a representative group of commodity users who formed the Resource Users Coalition. The Coalition developed Alternative F from information provided on the disk and submitted it as a public comment.

Work on the RMP and RMPA ceased August 2, 1995, as a result of the passage in July 1995, of Public Law 104-19 (the Rescission/Disaster Supplemental Bill), which caused funding for the plans to be rescinded. Work on the plans resumed in May 1996, with the passage of the Interior Department's FY 1996 appropriation.

A copy of preliminary revisions of parts of the Draft RMP/RMPA/EIS was provided in June, 1996, to a subcommittee of the New Mexico Oil and Gas Association's Roswell District Working Group, to enable them to prepare for discussions of their concerns with the plans. Local BLM staff

met with the subcommittee on August 13, and September 4 and 5, 1996, to discuss their concerns.

CONSISTENCY WITH OTHER PLANS

Coordination with other agencies and consistency with other plans were accomplished through frequent communications and cooperative efforts between the BLM and involved federal, state, and local agencies and organizations.

State, county and local governments and agencies were formally notified of the intent to begin planning. These organizations were briefed prior to starting development of the RMP/RMPA. Some of them also participated in developing and defining issues and planning criteria.

Land use plans prepared by other agencies were reviewed during the planning process. The following resource management plans were reviewed during the planning process: draft and final White Sands RMPs/EISs; draft Taos RMP/EIS; draft and final Socorro RMPs/EISs; draft and final Mimbres RMPs/EISs; draft Albuquerque District RMP/EIS on Oil and Gas Leasing and Development. Relevant parts of those plans were incorporated in the development of planning issues and criteria, which provided the basis for formulating alternatives.

Numerous copies of the Draft Roswell RMP/EIS and Draft Carlsbad RMPA/EIS were provided to local, state and federal offices, for review and comment by employees of those agencies.

The proposed plan has been written to be as consistent as possible with the officially approved and adopted natural resource management plans of other federal agencies, state and local governments, and Indian Tribes, while complying with the laws, regulations and policies governing the BLM's administration of the public lands. Coordination and consultation with other governmental agencies will continue throughout the planning process and implementation of the plan.

CONSULTATION AND COORDINATION

AGENCIES AND ORGANIZATIONS CONSULTED

Members of the RMP team have consulted formally or informally with numerous agencies, groups, and individuals during development of the plan. A partial list of contacts was printed in the Draft RMP/RMPA/EIS, but will not be reprinted in this document. A complete list is on file at the Roswell District Office.

INTERNAL COMMENT

Review of the Draft RMP/RMPA/EIS by BLM staff in offices in Roswell, Carlsbad and Santa Fe, New Mexico, and Denver, Colorado, resulted in more than 400 comments. Changes to the Draft RMP/RMPA/EIS resulting from these comments are described in Table 34.

PUBLIC COMMENT

Numerous comment letters were received during the public comment period. Each letter was assigned a reference number based on the order in which it arrived at the BLM office. The reference numbers are used to identify the comment letters in the tables contained in this chapter. The major topics discussed in each comment letter were identified according to the topic categories listed in Table 29. Statements made during public hearings on the Draft RMP/RMPA/EIS are handled in the same way. Responses to the comment letters and public hearing statements are printed with copies of the letters and transcripts of the hearings in Volume 2 of this document. A side-by-side comparison of the BLM's preferred alternative (Alternative E

in the Draft RMP/RMPA/EIS) and the Resource Users Coalition's Alternative F (comment letter 159) also is printed in Volume 2. Similar side-by-side comparisons of Appendixes 3, 4 and 5 also are printed in Volume 2. The BLM's responses to the comment letters and public hearing statements are keyed to the specific topics raised in the letters by a coding system which identifies the letter and a specific topic or paragraph in the letter (e.g., response 21-2 addresses letter 21, topic or paragraph 2). All letters and the public hearing transcripts have been reprinted verbatim. More than 1,220 individual comments in the letters and public hearing statements are addressed in the BLM's responses.

The public review of the Draft RMP/RMPA/EIS resulted in four categories of comment letters. The majority of detailed, substantive comments were contained in 169 letters, which are listed in Tables 30 and 31. The major topics discussed in each letter were identified according to the topic categories listed in Table 29.

A set of 18 comment letters are essentially copies of letter number 70. That letter is printed with the other comments letters listed in Tables 30 and 31, and the points raised have been addressed in the BLM's responses to the comments. Each of the 18 letters addresses the same topics, which are: P,1,B (refer to Table 29 for an explanation of these codes). Except for letter number 70, these letters will not be printed in this document. Refer to Table 32 for the list of these letters and an explanation of how those comments were handled.

A set of seven comment letters are copies of comment number 90, prepared by the New Mexico Oil and Gas Association and the Independent Petroleum Association of New Mexico. Comment 90 is essentially the same as Alternative F submitted by the Resource Users Coalition (comment number 159). Refer to Table 33 for the list of these letters and an explanation of how those comments were handled.

TABLE 29
TOPIC CATEGORIES ADDRESSED IN PUBLIC COMMENTS

Topic	Code
General Planning/Errors/Omissions	P
Oil and Gas, Surface	1
Oil and Gas, Subsurface	2
Other Minerals	3
Lands and Realty	4
Range Management and Vegetation	5
Cultural and Paleontological Resources	6
Caves and Karst	7
Recreation and Wilderness	8
Soil/Water/Air	9
Wildlife/T&E/Riparian	10
Fire Management	11
ACECs	12
Letter pertains only to Carlsbad Resource Area	C
Letter pertains only to Roswell Resource Area	R
Letter pertains to both resource areas	B
No Specific Comment/No Response Required	NR

A fourth set of comments came as form letters. The oil and gas industry circulated a preprinted form letter for people associated with the industry to sign and submit as comments. More than 2,200 of the form letters were received during the comment period. A sample letter, number 39, is printed with the other comments letters listed in Tables 30 and 31. The points raised have been addressed in the BLM's responses to the comments. The topics of concern are: P,1, 5, 7,10,12, B (refer to Table 29

for an explanation of these codes). The remainder of the form letters will not be printed in this document. A list of form letters submitted during the comment period is maintained at the Roswell District Office.

Some comments required clarification of the information presented in the Draft RMP/RMPA/EIS and that clarification is provided in the responses to the comments. In some cases, text modifications were also made as a result of those comments. Other comments pointed out needed changes in the text, and those changes were made, as well. Changes to the Draft RMP/RMPA/EIS resulting from these comments are listed in Table 34.

TABLE 30
LIST OF RESPONDENTS, BY ALPHABETICAL ORDER

Name/Organization of Respondent	No. Assigned to Response	Topic(s) Addressed in Letter
Agogino, Mercedes M.	119	P,1,5,8,10,B
Allensworth, Elbert E.	64	10,R
Amesbury, Tom	4	P,4,R
Amesbury, Tom	9	4,R
Bemis, Tom and Mannie	102	6,7,10,B
Beveridge, R.C./Western Reserves Oil Company Inc.	57	P,2,B
Billingsley, Grant A./Wagner & Brown, Ltd.	74	NR
Blackgoat, Fernando/Exxon Company, U.S.A.	115.1	P,1,B
Bode, Denise A./Independent Petroleum Association of America	135	P,1,B
Bode, Denise A./Independent Petroleum Association of America	160	P,1,B
Boles, Burnace J./Meridian Oil Inc.	130	P,1,6,7,10,B
Brewer, Don/Brewer Oil	60	5,R
Briney, Peg	68	P,5,7,8,12,R
Briney, William F., M.D.	67	P,5,R
Browne, Heidi F./Western Archaeological Services	139	1,5,B
Bruton, Randolph C., Jr./Mitchell Energy Corporation	153	P,B
Bullard, Johnny, Karen Bullard	101	P,5,12,R
Bush, Elizabeth S./Arco Permian	3	P,B
Bush, Elizabeth S./ARCO Permian	112	P,1,4,6,8,9,10, 11,B
Carlson, Gary/State of New Mexico, Office of the Commisioner of Public Lands	166	1,4,B
Carter, Beverly T.	49	NR
Cibas, Gedi/State of New Mexico, Environment Department	10	9,10,B
Clark, Sammy, Ann Clark	98	P,5,9,B
Coll, Marilyn/Arroyo Seco Ranch	26	P,1,8,10,R
Cooper, John W.	138	4,R
Corbitt, Mr. and Mrs. Kelley M.	43	4,R
Corn, Mike/Roswell Wool	134	P,1,8,10,R
Craig, Jesse M., Helen Craig	75	P,5,R

TABLE 30
LIST OF RESPONDENTS, BY ALPHABETICAL ORDER

Name/Organization of Respondent	No. Assigned to Response	Topic(s) Addressed in Letter
Craig, David, Sylvia F. Craig	76	P,5,R
Cummings, Jan	81	1,5,7,8,10,12,R
Deckert, Frank J./National Park Service	32	P,7,B
Domarest, J.M./Santa Fe Energy Resources, Inc.	84	1,9,10,B
Derrick, Lewis/New Mexico Cattle Growers Association	114	P,5,7,10,R
Detry, Michelle	63	NR
Detry, Rich	55	NR
Devine, James F./U.S. Geological Survey	44	P,R
Domenici, Pete V./U.S. Senate	8	P,1,B
Domenici, Pete V./U.S. Senate	41.1	P,B
Doyle, Curtis and Lisa	106	P,5,9,10,12
DuBois, Frank A./N.M. Department of Agriculture	127	4,5,9,10,11,12,R
Elkins, Sam	145	P,5,9,12,R
Elliott, Frank O./Elliott Oil Company	27	1,8,10,B
Eppers, Bud, et.al./Resource Users Coalition	159	P,all topics,B
Eppers, Bud/Southeastern New Mexico Grazing Association	89	P,5,8,9,10,11,R
Ericson, Connie M./Mitchell Energy Corporation	94	1,B
Ezzell, T. Calder , Jr./Chaves County Public Lands Advisory Committee	154	P,R
Forrest, Bob/The Carlsbad Department of Development	142	P,1,5,9,12,B
Girand, Dan/Pruco	79	P,1,B
Girand, Dan/Independent Petroleum Association of New Mexico	20	P,B
Gist, James, Peggy Gist	103	P,5,R
Gray, R.F./Texaco Exploration and Production, Inc.	17	P,B
Green, Ron/Western Land Realty	6	4,R
Green, Ron	31	4,R
Green, Ron/Lincoln Valley Land Company	16	4,R
Green, Ron	129	P,4,R
Grella, Michael J./Costilla Petroleum Corporation (sample of form letter)	70	P,1,B
Ham, Leon and Teresa	12	4,R

TABLE 30
LIST OF RESPONDENTS, BY ALPHABETICAL ORDER

Name/Organization of Respondent	No. Assigned to Response	Topic(s) Addressed in Letter
Herrmann, Lois C./Sangre de Cristo Audubon Society	121	5,8,10,R
Hillman, Mike, Ronald D. Hillman/Red Bluff Ranch	73	P,5,6,R
Horning, John C./Forest Guardians	122	P,1,5,9,10,12,R
Hoskin, Ester M. [sample of form letter]	39	P,1,5,7,10,12,B
Hunter, E.K./Department of Energy, Carlsbad Area Office	14	P,C
Jennings, Thomas E./Office of Mayor, Roswell, NM	163	P,B
Johnson, E.L. (Bill), Jr./Texaco Exploration and Production Inc.	128	P,1,4,6,8,9,10, 12,B
Johnson, Wilmoth	51	P,1,5,9,12,B
Johnson, Honorable Gary E./Governor of New Mexico	47	P,2,5,B
Kelley, Kap	52	P,B
Key, Mrs. Melvin	92	P,5,R
Key, W.M., Jr.	59	5,R
Kiehne, Max Lee/Lincoln Valley Land Company	132	P,4,R
Kiker, Robert D./Permian Basin Petroleum Association	19	P,R
Kukla, A.R./Marathon Oil Company	156	P,1,B
Lacey, J.M./Devon Energy Corporation	152	P,B
Latimer, M.R./Exxon Company, U.S.A.	148	P,1,6,8,B
Lopez, Ed/Department of the Air Force	18	P,8,10,R
Lunsford, Douglas L.	91	P,1,B
Lyles, John T.M., H.J. Turin/Pajarito Grotto, National Speleological Society	111	P,7,B
Madera, Ellen, C.E. Hislop	108	P,1,4,5,10,12,R
Mahone, Robert H., Jr.	147	P,10,R
Maldonado, Frank P.	38	NR
Manning, Richard C./Tangle Cross Ranch	13	4,R
Manning, R.C./Tangle Cross Ranch	30	4,R
Maracchini, Jerry A./New Mexico Department of Game & Fish	87	P,5,8,10,11,12,B
Marley, Robert C.	123	P,4,5,8,10,R
Marley, Mark	120	P,4,5,8,10,R
Mason, John W./Burnett Oil Co., Inc.	72	P,1,B

TABLE 30
LIST OF RESPONDENTS, BY ALPHABETICAL ORDER

Name/Organization of Respondent	No. Assigned to Response	Topic(s) Addressed in Letter
Massey, Norman	85	4,8,12,R
Maxey, John C., Jr./Read & Stevens, Inc.	99	P,1,B
McInnes, Willie	46	5,9,10,R
McIntyre, Norbert D.	40	NR
McMinn, Rory/Chaves County Commission	58	P,R
McNally, Scott/McNally Ranch Company	107	P,4,5,9,10,R
Meehan, Robert E./Department of the Army, Corps of Engineers	167	1,R
Melly, Margaret M./Vastar Resources, Inc.	136	P,1,B
Melton, Bobby/ Sue Melton	50	P,1,5,9,12,B
Merritt, Beverly	96	P
Merritt, Ronald L.	95	P,5,7,9,12,R
Merritt, Margaret E.	109	P,10,B
Mobley, Jay/Chairman, Eddy County Commission	53	P,1,5,9,12,B
Mobley, Jay/Chairman, Eddy County Commission	165	P,1,9,12,B
Montes, Monroy/Lincoln County Board of Commissioners	25	NR
Montgomery, James B., Jr., PhD	88	10,12,R
Moorhead, Bob	24	P,4,10,R
Moran, Chuck/Yates Petroleum Corporation	5	P,B
Moran, Chuck/Yates Petroleum Corporation	22	P,B
Moran, Chuck/Yates Petroleum Corporation	117	P,1,2,3,4,5,6,7,8,9, 10,11,12,B
Moran, Chuck/Yates Petroleum Corporation (comments on Appendixes, only)	157	P,1,B
Mustard, Donald G./Amoco Corporation	131	1,10,B
Najera, Sonia R./U.S. Fish and Wildlife Service/Bitter Lake NWR	56	P,5,7,10,12,R
New Mexico Oil & Gas Association and Independent Petroleum Association of New Mexico	90	P, all topics, B
NewVille, J.F./Chevron U.S.A. Production Company	116	P,1,7,8,9,10,C
Nibert, Gregory J.	158	P,1,B
Nibert, Gregory J./Hinkle, Cox, Eaton, Coffield & Hensley	1	P,B
Nibert, Greg/Hinkle, Cox, Eaton, Coffield & Hensley	7	P,B,NR

TABLE 30
LIST OF RESPONDENTS, BY ALPHABETICAL ORDER

Name/Organization of Respondent	No. Assigned to Response	Topic(s) Addressed in Letter
Nordby, Larry V./National Park Service	162	9,B
Olson, David J./Lincoln Valley Land Company	2	P,4,R
Olson, David J./Lincoln Valley Land Company	113	4,R
Patterson, Randy/Yates Petroleum Corporation	37	P,1,2,B
Patterson, Randy G. Patterson	42	P,1,5,7,10,12,B
Patterson, Annette C.	78	1,7,10,12,B
Pearce, Ricky/Pearce Trust Ranch	61	P,5,10,12,R
Permian Basin Petroleum Association	149	P,1,6,9,10,B
Peterson, Roger/New Mexico Natural History Institute	126	P,5,8,R
Pierce, Truman	83	5,9,R
Pike, Joseph	125	5,R
Price, Wayne	41	NR
Propst-Fowler, Jennifer/ U.S. Fish and Wildlife Service	164	P,1,4,5,8,9,10, 11,12,B
Public Hearing Transcript of January 10, 1995	28	P,1,2,4,5,6,7,8,9,10,B
Public Hearing Transcript of January 11, 1995	29	P,1,2,4,5,6,7,8,9,10,B
Raga, Georgia/Navajo Refining Company	34	4,B
Rayroux, Jesse F.	66	1,8,B
Rayroux, Jesse F.	77	5,9,10,R
Read, Charles B./Read & Stevens, Inc.	33	P,1,B
Read, Charles B./Read & Stevens, Inc.	150	P,7,10,B
Reynolds, Ken/WEK Drilling Co., Inc.	48	1,B
Ristau, Toni K./Public Service Company of New Mexico	124	1,B
Russell, Dorothy J.	69	P,1,4,5,6,8,9, 10,12,B
Saginaw, Jane N./U.S. Environmental Protection Agency	161	P,7,9,B
Salisbury, Jennifer A./State of New Mexico, Energy, Minerals and Natural Resources Department	45	1,B
Sanchez, Anthony	11	4,R
Sandell, Catherine I.	146	5,8,12,R
Shores, Elizabeth J.	141	8,10,R

TABLE 30
LIST OF RESPONDENTS, BY ALPHABETICAL ORDER

Name/Organization of Respondent	No. Assigned to Response	Topic(s) Addressed in Letter
Smiley, Rich/Meridian Oil (supplemental)	140	1,B
Smoot, Jeanette/T75 Ranch Inc.	35	4,R
Smoot, T. B., Jeanette Smoot	144	P,5,9,R
Smorynski, Ronald	100	5,10,R
Spannaus, Harry A./Parker & Parsley Petroleum USA, Inc.	71	P,1,B
Spurgeon, V.R./Phillips Petroleum Company	86	P,1,B
Spurgeon, V.R./Phillips Petroleum Company	151	P,10,12,B
State of New Mexico, Senate	155	P,B
Sullivan, Terry/The Nature Conservancy	110	P,3,5,7,10,
Thaeler, Marianne H./Southern New Mexico Group, Sierra Club	137	1,5,8,B
Thomas, John, Jr.	65	P,1,3,4,5,8,9, 10,11,12,R
Thurman, Tim and Lori	36	4,R
Tulk, Johnny	62	P,R
Unger, R.F./Marathon Oil Company	133	P,1,10,B
Velasquez, Joe/Chaves County Commission	21	P,B
Vicente, Joe M.	23	4,R
Wardwell, Gwen/Rio Grande Chapter of the Sierra Club	104	P,1,3,4,5,8,9, 10,11,12,B
Watson, Marilyn, Lyndon Watson	115	P,1,5,7,8,R
Watson, Robert H./Read & Stevens, Inc.	54	P,1,7,10,B
West, Steve/Chihuahuan Desert Conservation Alliance	97	P,1,4,5,6,7,8,9,10,12
Wolle, Charles R.	118	P,10,B
Wood, Brian/Permits West, Inc.	143	P,1,B
Woodruff, Alexander/Independent Petroleum Association of Mountain States	93	1,B
Wootten, Thomas H./T & E, Inc.	15	12,R
Wootten, Thomas H./T & E Inc.	105	1,5,8,12,R
Yriart, Robert M.	82	P,5,7,8,9,10, 12,R
[name of commentor not provided]	80	5,R

TABLE 31
LIST OF RESPONDENTS, BY COMMENT LETTER NUMBER

No. Assigned to Response	Name/Organization of Respondent	Topic(s) Addressed in Letter
1	Gregory J. Nibert/ Hinkle, Cox, Eaton, Coffield & Hensley	P,B
2	David J. Olson/ Lincoln Valley Land Company	P,4,R
3	Elizabeth S. Bush/ARCO Permian	P,B
4	Tom Amesbury	P,4,R
5	Chuck Moran/Yates Petroleum Corporation	P,B
6	Ron Green/Western Land Realty	4,R
7	Greg Nibert/Hinkle, Cox, Eaton, Coffield & Hensley	P,B,NR
8	Pete V. Domenici/U.S. Senate	P,1,B
9	Tom Amesbury	4,R
10	Gedi Cibas/State of New Mexico, Environment Department	9,10,B
11	Anthony Sanchez	4,R
12	Leon and Teresa Ham	4,R
13	Richard C. Manning/Tangle Creek Ranch	4,R
14	E.K. Hunter/Department of Energy, Carlsbad Area Office	P,C
15	Thomas H. Wootten/T&E Inc.	12,R
16	Ron Green/Lincoln Valley Land Company	4,R
17	R.F. Gray/Texaco Exploration and Production, Inc.	P,B
18	Ed Lopez/Department of the Air Force	P,8,10,R
19	Robert D. Kiker/Permian Basin Petroleum Association	P,R
20	Dan Girand/Independent Petroleum Association of New Mexico	P,B
21	Joe Velasquez/Chaves County Commission	P,B
22	Chuck Moran/Yates Petroleum Corporation	P,B
23	Joe M. Vicente	4,R
24	Bob Moorhead	P,4,10,R
25	Monroy Montes/Lincoln County Board of Commissioners	NR
26	Marilyn Coll/Arroyo Seco Ranch	P,1,8,10,R
27	Frank O. Elliott/Elliott Oil Company	1,8,10,B
28	Public Hearing Transcript of January 10, 1995	P,1,2,4,5, 6,7,8,9,10,B

TABLE 31
LIST OF RESPONDENTS, BY COMMENT LETTER NUMBER

No. Assigned to Response	Name/Organization of Respondent	Topic(s) Addressed in Letter
29	Public Hearing Transcript of January 11, 1995	P,1,2,4,5, 6,7,8,9,10,B
30	R.C. Manning/Tangle Cross Ranch	4,R
31	Ron Green	4,R
32	Frank J. Deckert/National Park Service	P,7,B
33	Charles B. Read/Read & Stevens, Inc.	P,1,B
34	Georgia Raga/Navajo Refining Company	4,B
35	Jeanette Smoot/T75 Ranch Inc.	4,R
36	Tim and Lori Thurman	4,R
37	Randy Patterson/Yates Petroleum Corporation	P,1,2,B
38	Frank P. Maldonado	NR
39	Ester M. Hoskin [sample of form letter]	P,1,5,7,10,12,B
40	Norbert D. McIntyre	NR
41	Wayne Price	NR
41.1	Pete V. Domenici/U.S. Senate	P,B
42	Randy G. Patterson	P,1,5,7,10,12,B
43	Mr. and Mrs. Kelley M Corbitt	4,R
44	James F. Devine/U.S. Geological Survey	P,R
45	Jennifer A. Salisbury/State of New Mexico, Energy, Minerals and Natural Resources Department	1,B
46	Willie McInnes	5,9,10,R
47	Honorable Gary E. Johnson/Governor of New Mexico	P,2,5,B
48	Ken Reynolds/WEK Drilling Co., Inc.	1,B
49	Beverly T. Carter	NR
50	Bobby Melton/Sue Melton	P,1,5,9,12,B
51	Wilmoth Johnson	P,1,5,9,12,B
52	Kap Kelley	P,B
53	Jay Mobley/Chairman, Eddy County Commission	P,1,5,9,12,B
54	Robert H. Watson/Read & Stevens, Inc.	P,1,7,10,B
55	Rich Detry	NR

TABLE 31
LIST OF RESPONDENTS, BY COMMENT LETTER NUMBER

No. Assigned to Response	Name/Organization of Respondent	Topic(s) Addressed in Letter
56	Sonia R. Najera/U.S. Fish and Wildlife Service/Bitter Lake NWR	P,5,7,10,12,R
57	R.C. Beveridge/Western Reserves Oil Company Inc.	P,2,B
58	Rory McMinn/Chaves County Commission	P,R
59	W.M. Key, Jr.	5,R
60	Don Brewer/Brewer Oil	5,R
61	Ricky Pearce/Pearce Trust Ranch	P,5,10,12,R
62	Johnny Tulk	P,R
63	Michelle Detry	NR
64	Elbert E. Allensworth	10,R
65	John Thomas, Jr.	P,1,3,4,5,8,9, 10,11,12,R
66	Jesse F. Rayroux	1,8,B
67	William F. Briney, M.D.	P,5,R
68	Peg Briney	P,5,7,8,12,R
69	Dorothy J. Russell	P,1,4,5,6,8,9, 10,12,B
70	Michael J. Grella/Costilla Petroleum Corporation (sample of form letter)	P,1,B
71	Harry A. Spannaus/Parker & Parsley Petroleum USA, Inc.	P,1,B
72	John W. Mason/Burnett Oil Co., Inc.	P,1,B
73	Mike Hillman, Ronald D. Hillman/Red Bluff Ranch	P,5,6,R
74	Grant A. Billingsley/Wagner & Brown, Ltd.	NR
75	Jesse M. Craig, Helen Craig	P,5,R
76	David Craig, Sylvia F. Craig	P,5,R
77	Jesse F. Rayroux	5,9,10,R
78	Annette C. Patterson	1,7,10,12,B
79	Dan Girand/Pruco	P,1,B
80	[name of commentor not provided]	5,R
81	Jan Cummings	1,5,7,8,10,12,R
82	Robert M. Yriart	P,5,7,8,9,10, 12,R
83	Truman Pierce	5,9,R

TABLE 31
LIST OF RESPONDENTS, BY COMMENT LETTER NUMBER

No. Assigned to Response	Name/Organization of Respondent	Topic(s) Addressed in Letter
84	J.M. Demarest/Santa Fe Energy Resources, Inc.	1,9,10,B
85	Norman Massey	4,8,12,R
86	V.R. Spurgeon/Phillips Petroleum Company	P,1,B
87	Jerry A. Maracchini/New Mexico Department of Game & Fish	P,5,8,10,11,12,B
88	James B. Montgomery, Jr., PhD	10,12,R
89	Bud Eppers/Southeastern New Mexico Grazing Association	P,5,8,9,10,11,R
90	New Mexico Oil & Gas Association and Independent Petroleum Association of New Mexico	P, all topics, B
91	Douglas L. Lunsford	P,1,B
92	Mrs. Melvin Key	P,5,R
93	Alexander Woodruff/Independent Petroleum Association of Mountain States	1,B
94	Connie M. Ericson/Mitchell Energy Corporation	1,B
95	Ronald L. Merritt	P,5,7,9,12,R
96	Beverly Merritt	P
97	Steve West/Chihuahuan Desert Conservation Alliance	P,1,4,5,6,7,8,9,10,12
98	Sammy Clark, Ann Clark	P,5,9,B
99	John C. Maxey, Jr./Read & Stevens, Inc.	P,1,B
100	Ronald Smorynski	5,10,R
101	Johnny Bullard, Karen Bullard	P,5,12,R
102	Tom and Mannie Bemis	6,7,10,B
103	James Gist, Peggy Gist	P,5,R
104	Gwen Wardwell/Rio Grande Chapter of the Sierra Club	P,1,3,4,5,6,9, 10,11,12,B
105	Thomas H. Wootten/T & E, Inc.	1,5,8,12,R
106	Curtis and Lisa Doyle	P,5,9,10,12
107	Scott McNally/McNally Ranch Company	P,4,5,9,10,R
108	Ellen Madera, C.E. Hislop	P,1,4,5,10,12,R
109	Margaret E. Merritt	P,10,B
110	Terry Sullivan/The Nature Conservancy	P,3,5,7,10,
111	John T.M. Lyles, H.J. Turin/Pajarito Grotto, National Speleological Society	P,7,B

TABLE 31
LIST OF RESPONDENTS, BY COMMENT LETTER NUMBER

No. Assigned to Response	Name/Organization of Respondent	Topic(s) Addressed in Letter
112	Elizabeth S. Bush/Arco Permian	P,1,4,6,8,9,10,11,B
113	David J. Olson/Lincoln Valley Land Company	4,R
114	Lewis Derrick/New Mexico Cattle Growers Association	P,5,7,10,R
115	Marilyn Watson, Lyndon Watson	P,1,5,7,8,R
115.1	Fernando Blackgoat/Exxon Company, U.S.A.	P,1,B
116	J.F. NewVille/Chevron U.S.A. Production Company	P,1,7,8,9,10,C
117	Chuck Moran/Yates Petroleum Corporation	P,1,2,3,4,5,6,7,8,9,10, 11,12,B
118	Charles R. Wolle	P,10,B
119	Mercedes M. Agogino	P,1,5,8,10,B
120	Mark Marley	P,4,5,8,10,R
121	Lois C. Herrmann/Sangre de Cristo Audubon Society	5,8,10,R
122	John C. Horning/Forest Guardians	P,1,5,9,10,12,R
123	Robert C. Marley	P,4,5,8,10,R
124	Toni K. Ristau/Public Service Company of New Mexico	1,B
125	Joseph Pike	5,R
126	Roger Peterson/New Mexico Natural History Institute	P,5,8,R
127	Frank A. DuBois/N.M. Department of Agriculture	4,5,9,10,11,12,R
128	E.L. (Bill) Johnson, Jr./Texaco Exploration and Production Inc.	P,1,4,6,8,9,10,12,B
129	Ron Green	P,4,R
130	Burnace J. Boles/Meridian Oil Inc.	P,1,6,7,10,B
131	Donald G. Mustard/Amoco Corporation	1,10,B
132	Max Lee Kiehne/Lincoln Valley Land Company	P,4,R
133	R.F. Unger/Marathon Oil Company	P,1,10,B
134	Mike Corn/Roswell Wool	P,1,8,10,R
135	Denise A. Bode/Independent Petroleum Association of America	P,1,B
136	Margaret M. Melly/Vastar Resources, Inc.	P,1,B
137	Marianne H. Thaeler/Southern New Mexico Group, Sierra Club	1,5,8,B
138	John W. Cooper	4,R
139	Heidi F. Browne/Western Archaeological Services	1,5,B

TABLE 31
LIST OF RESPONDENTS, BY COMMENT LETTER NUMBER

No. Assigned to Response	Name/Organization of Respondent	Topic(s) Addressed in Letter
140	Rich Smiley/Meridian Oil (supplemental)	1,B
141	Elizabeth J. Shores	8,10,R
142	Bob Forrest/The Carlsbad Department of Development	P,1,5,9,12,B
143	Brian Wood/Permits West, Inc.	P,1,B
144	T. B. Smoot, Jeanette Smoot	P,5,9,R
145	Sam Elkins	P,5,9,12,R
146	Catherine I. Sandell	5,8,12,R
147	Robert H. Mahone, Jr.	P,10,R
148	M.R. Latimer/Exxon Company, U.S.A.	P,1,6,8,B
149	Permian Basin Petroleum Association	P,1,6,9,10,B
150	Charles B. Read/Read & Stevens, Inc.	P,7,10,B
151	V.R. Spurgeon/Phillips Petroleum Company	P,10,12,B
152	J.M. Lacey/Devon Energy Corporation	P,B
153	Randolph C. Bruton, Jr./Mitchell Energy Corporation	P,B
154	T. Calder Ezzell, Jr./Chaves County Public Lands Advisory Committee	P,R
155	State of New Mexico, Senate	P,B
156	A.R. Kukla/Marathon Oil Company	P,1,B
157	Chuck Moran/Yates Petroleum Corporation (comments on Appendixes, only)	P,1,B
158	Gregory J. Nibert	P,1,B
159	Bud Eppers, et.al./Resource Users Coalition	P,all topics,B
160	Denise A Bode/Independent Petroleum Association of America	P,1,B
161	Jane N. Saginaw/U.S. Environmental Protection Agency	P,7,9,B
162	Larry V. Nordby/National Park Service	9,B
163	Thomas E. Jennings/Office of Mayor, Roswell, NM	P,B
164	Jennifer Fowler-Propst/ U.S. Fish and Wildlife Service	P,1,4,5,8,9,10,11,12,B
165	Jay Mobley/Chairman, Eddy County Commission	P,1,9,12,B
166	Gary Carlson/State of New Mexico, Office of the Commisioner of Public Lands	1,4,B
167	Robert E. Meehan/Department of the Army, Corps of Engineers	1,R

TABLE 32
LIST OF COMMENT LETTER 70 DUPLICATES

The comment letters listed in this table are copies of comment letter number 70, or letters with slight modifications of comment letter number 70, that address the same issues. Each comment letter addresses the same topics, which are: P,1,B (refer to Table 29 for an explanation of these codes). Comment letter number 70 is used as an example and is printed with the other comments letters listed in Tables 30 and 31. The comment letters listed below will not be printed in this document. These letters are available for review at the Roswell District Office.

No. Assigned to Comment	Name/Organization of Respondent
F2-1	Don L. Sparks/Discovery Operating, Inc.
F2-2	Kevin T. Sparks/JKTS Corporation
F2-3	W. Jeffrey Sparks/Sparco Producing, Inc.
F2-4	C. Todd Sparks
F2-5	Mark B. Murphy/Strata Production Company
F2-6	Jerry W. Hoover/Conoco, Inc.
F2-7	Robert L. Bayless
F2-8	Robert G. Armstrong/Armstrong Energy Corporation
F2-9	J. Wayne Bailey, Worth Carlin/Bass Enterprises Production Co.
F2-10	Robert D. Kiker/Permian Basin Petroleum Association
F2-11	John R. Gray/Marbob Energy Corporation
F2-12	Steven M. Yates/Harvey E. Yates Company
F2-13	J.M. Lacey/Devon Energy Coporation
F2-14	Sharon R. Hamilton/Yates Energy Company
F2-15	Steven P. Tischer/Parker & Parsley Petroleum USA, Inc.
F2-16	R.A. Lowery/Maralo Inc.
F2-17	Kenneth Barbe, Jr./Manzano Oil Corporation
F2-18	Wayne A. Fields/Kaiser-Francis Oil Company

TABLE 33
LIST OF COMMENT LETTER 90 DUPLICATES

The comments listed in this table are copies of comment number 90, submitted by the New Mexico Oil and Gas Association and the Independent Petroleum Association of New Mexico. Comment 90 is essentially the same as Alternative F submitted by the Resource Users Coalition (comment number 159). A portion of comment number 159 is printed in Volume 2 of this document, with the responses to the comment letters. Each comment letter listed below addresses the same topics, which are: all topics except C, R and NR (refer to Table 29 for an explanation of these codes). Because these comments duplicate the Resource Users Coalition comment and are quite lengthy, they are not reprinted in this document. These letters are available for review at the Roswell District Office.

No. Assigned to Comment	Name/Organization of Respondent
FS-1	R. A. Lowery/Maralo Inc.
FS-2	Robert G. Armstrong/Armstrong Energy Corporation
FS-3	Jerry W. Hoover/Conoco Inc.
FS-4	Steven P. Tischer/Parker & Parsley Petroleum USA, Inc.
FS-5	Fred G. Yates/Yates Energy Corporation
FS-6	J. Wayne Bailey/Bass Enterprises Production
FS-7	Chuck Moran/Yates Petroleum Corporation

TABLE 34
TEXT CHANGES

Changes in the Draft RMP/RMPA/EIS resulting from public and internal BLM review and comment are listed in this table. Changes relating to the Proposed RMP/RMPA/FEIS have been made in the text of that document, in addition to being listed here. Changes in sections of the Draft RMP/RMPA/EIS not reprinted are listed here and are included in the Draft document by reference.

Partial paragraphs at the tops of columns and bullets are not counted as paragraphs when determining the entries for paragraphs. Paragraph 1 in a column is the first full paragraph. Page numbers and other references are from the Draft RMP/RMPA/EIS.

Page	Column	Paragraph	Line	Should Be:
xi			1-3	The page numbers for Tables 1, 2 and 3 should be **S-3, S-10** and **S-35**, respectively.
S-3	2	5	4	...on **about 119,440** acres.
S-3	3	1	1	Close about **127,375** acres...
S-8	3	1	3	Replace "Dune Sagebrush Lizard" with **Sand Dune Lizard**
S-8	4	1	3,4	Replace "Dune Sagebrush Lizard" with **Sand Dune Lizard**
S-8	5	1	3	Replace "Dune Sagebrush Lizard" with **Sand Dune Lizard**
S-8	6	1	3	Replace "Dune Sagebrush Lizard" with **Sand Dune Lizard**
S-10	2	3	3	...on about **22,336** acres.
S-10	3	3	3	...on about **22,041** acres.
S-12	4	5	5	Delete last sentence.
S-12	6	5	5	Delete last sentence.
S-17	3	4	4,5	...limited to **designated** roads and trails...
S-19	6	1	1,2	...approximately **640** acres...
S-26	4	4		Replace with: **Designate about 3,000 acres "Limited" to designated roads and trails.**
S-29	5	5	1,2	Exclude grazing on **2,438** acres.
S-30	6	5		Replace with: **Same as Alternative D**
S-31	3	2	2	Delete the reference to the Rio Bonito Campground.
S-31	3	3	1	...up to **1,320** acres...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
S-32	3	5	4-6	Delete the reference to the Rio Bonito Campground and buffer area.
S-37	3	3	2-4	...acres of non-federal **land and up to 3,000 acres along** the Rio Bonito...
S-37	6	3	5	...and up to 3,000 acres **along the Rio Bonito** could occur.
S-46	2	2	3,4	...habitat areas **may** continue...
S-47	2	1	11	Delete sentence beginning **Emphasis would remain...**
1-10	2	bullet 7	3	...industry, and individuals. **(Refer to the list of agencies and organizations consulted, in Chapter 5 of the Draft RMP/RMPA/EIS.)**
2-1	2	2	5	...wildlife **habitat.** However,...
2-3	1	3	5	...apply reasonable **mitigation** measures. **These would typically include,** at a minimum...
2-3	1	3	8	At end of paragraph add: **Mitigations of impacts involving moves greater than 200 meters or delays greater than 60 days could result from NEPA analysis. (Also, refer to the introduction to Appendix 3.)**
2-3	1	after 3		Add a new paragraph: **The Authorized Officer may consider expressions of interest for the leasing of BLM-administered public lands when the sole purpose of leasing is to maintain state well-spacing requirements. This could occur in areas that are closed to leasing (except for wilderness study areas) or open to oil and gas leasing with no surface occupancy, including areas affected by the Surface Use and Occupancy Requirements (Appendix 3). This leasing opportunity could apply to an entire lease or to a portion of a lease parcel. In this situation, there can be no intention on the part of the nominator to occupy the surface of the lease or portion of the lease. For a lease to be issued, there can be not concerns about impacts to subsurface resources or values resulting from drilling on any unrestricted parts of the lease or on adjacent leases, and surface occupancy or use absolutely would not be authorized. A lease could be issued for a standard term with a no surface occupancy leasing stipulation (See Figure 1).**
2-3	1	5	1	...to **any stipulations appended to a lease,** the development...
2-3	1	5	4,5	...(Appendix 4) **would be applied on a case-by-case basis.**
2-3	2	1	2-4	...to be **equipped to deter entry by** birds, bats or other **wildlife, and livestock.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-3	2	after 1		Add new paragraph: The BLM would encourage the use of practices such as off-lease measurement, unit agreements, field development plans, communitization agreements, consolidated batteries, and other innovative approaches, to reduce the extent of surface disturbance and to mitigate other forms of impacts. These practices would conform with Onshore Oil and Gas Orders 4 and 5, and state requirements.
2-3	2	after 1		Add new paragraph: The construction, maintenance, rehabilitation, abandonment, and closure of all roads subject to BLM jurisdiction would be conducted according to the "BLM-NMSO Road Policy, Standards and Procedures." Specific practices for implementing this policy are described in Appendix 4. The BLM may monitor use of roads and notify joint-cost-sharing companies when maintenance is needed.
2-3	2	3	4-7	Replace last sentence with: If avoidance could not be accomplished, potentially eligible sites would be tested to determine their eligibility and mitigation such as data recovery would be required for eligible sites. Coordination and consultation about the treatment of sites would continue between the BLM and SHPO, pursuant to Section 106 of the National Historic Preservation Act.
2-3	2	after 4		Add new paragraph: The BLM would continue to process Notices of Intent (NOI) to conduct geophysical exploration on public lands, on a case-by-case basis. Geophysical exploration may be an appropriate, temporary surface use in areas that are closed to oil and gas leasing or that have restricted surface use, such as no surface occupancy leasing stipulations. The processing of geophysical NOIs will include NEPA compliance. The terms and conditions for NOIs and the conditions of approval for geophysical exploration are listed in Appendix 4. The Surface Use and Occupancy Requirements (Appendix 3) and off-highway vehicle use designations would also be applied to geophysical exploration, when necessary.
2-3	2	5		Replace paragraph with: The burial of pipelines associated with oil and gas exploration, development, production and transportation is preferred. Pipelines greater than four inches in nominal diameter, all injection lines, and gas lines with a pressure greater than 125 psi must be buried and preferably be constructed of steel. If the use of plastic pipe is approved, the pipe must meet American Petroleum Institute specifications. A waiver of the requirement to bury pipelines would be considered in the following situations:
2-4	1	bullet 1		Delete paragraph.
2-4	1	bullet 3	5	...painting may be required...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-4	1	bullet 3	7	...management areas (see Appendix 3) and NTL 87-1, New Mexico. Waiver of the requirement for painting would be considered when short distances are involved, when a pipeline is not readily visible because of screening, or in areas that are not visually sensitive.
2-4	1	5	2,3	...would continue to be leased pursuant to the Secretary's 1986 Potash Order, or subsequent revisions of the order. The Potash Stipulation, which reflects the BLM's administration of the potash area, would be applied to new leases. Generally, the Potash Stipulation allows...
2-4	2	1	7	...would remain in effect. Additional...
2-5		Map 5		Map 5 in the Draft RMPA is replaced by Map 3 in the Proposed RMPA.
2-6	1	bullet 4	4,5	...subject to mitigation measures prescribed in the EIS;
2-6	2	item #3		Replace with: 3. The one hundred-year flood plain as identified through the use of: Federal Emergency Management Agency flood insurance rate maps or flood hazard boundary maps; published maps or information available from the U.S. Army Corps of Engineers, USDA Natural Resource Conservation Service, U.S. Geological Survey, or other agencies; analysis of flood data; field inspections; or, other methods.
2-6	2	5	4	...see Map 7. The leasing requirements of other surface management agencies have been included for purposes of disclosure and to provide a complete view of oil and gas leasing in the resource area. The other surface...
2-6	2	5	7	...leasing stipulations; they are included here without modification. The leasing requirements...
2-9	1	bullet 5	5	...(e.g., floodplain locations, see Appendixes 3 and 4).
2-9	1	9	5	...(e.g., floodplain locations, see Appendixes 3 and 4).
2-9	2	bullet 2	1	Gnome Site (680 acres), not open...
2-9	2	bullet 4	1,2	Living Desert (1,120 acres), not open to leasing.
2-9	2	1	6	...would remain in effect.
2-10	1	1	4	...see Map 8. The leasing requirements of other surface management agencies have been included for purposes of disclosure and to provide a complete view of oil and gas leasing in the resource area. The other surface...
2-10	1	1	7	...leasing stipulations; they are included here without modification. The leasing requirements...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-10	1	bullet 5	4,5	...(e.g., **floodplain locations, see Appendixes 3 and 4).**
2-10	2	bullet 4	5-7	...and Conditions of Approval (Appendix 4), **and the following conditions:** - **No drilling shall be conducted within 1,000 feet of the dam embankments, appurtenant structures and the spillway;** - **No buildings, structures, etc., shall be constructed or otherwise left in areas subject to inundation due to flood storage; and,** - **All activities shall be reported to and coordinated with the Santa Rosa Lake and Dam Reservoir manager.**
2-10	2	bullet 7	1-2	Replace sentence with: **Bottomless Lakes (460 acres), not open to leasing.**
2-11		Map 8		Map 8 in the Draft RMP is replaced by Map 9 in the Proposed RMP.
2-12		Table 5		Table 5 in the Draft RMP is replaced by Table 11 in the Proposed RMP.
2-13		Map 9		Map 9 in the Draft RMP is replaced by Map 8 in the Proposed RMP.
2-14	1	bullet 2	1-3	Bitter Lake National Wildlife Refuge (6,320 acres), **not open to leasing.** The Salt Creek Wilderness...
2-14	1	3	8-13	Replace sentences with: **Rights-of-way locations, and terms and conditions for their use, would be identified. Rights-of-way would be granted only after site-specific analysis and development of specific conditions of approval.**
2-14	1	5	5	Add new sentences: **No additional rights-of-way corridors would be designated. Rights-of-way would continue to be approved outside of designated corridors.**
2-15	1	3	4,5	...Management Framework Plan **Amendment/Environmental...**
2-15	1	3	8	Add: **Livestock grazing management decisions from previous land use plans, and the disposition of those decisions, are discussed in Appendix 19.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-15	1	4	3-9	...revision. **Each year, the BLM would revise some of the 45 or begin new activity plans (an AMP or the functional equivalent of an AMP) on "I" category allotments. However, the estimated total number of both existing and new AMPs worked on each year by the BLM would average about three. Permittees, lessees, other federal or state resource management agencies, or interested citizens also may prepare activity plans for allotment management. The management plans would be prepared according to the regulations current at the time (presently 43 CFR 4120.2). The concept of multiple use would be used in the development of activity plans to address other resource concerns, such as wildlife...**
2-15	1	5	4	...shinnery oak is **not** treated, **adjustments** in livestock numbers...
2-15	1	5	8,9	...and the **sand dune** lizard.
2-15	1	6	1-3	Within the Macho WHA, **new internal pasture fences constructed of netwire would not** be allowed...that currently support **pronghorn**...
2-15	2	partial at top	2	...suitable antelope habitat. **Future changes in class of livestock would necessitate reconsidering the fencing standard to be used in each situation.** Exceptions to this requirement...
2-15	2	after 1		Insert new paragraphs relating to **Standards for Rangeland Health and Guidelines for Grazing Management.** Refer to the Proposed Plan for the new text.
2-15	2	3	1-4	Replace with: **Treatment of weed species would be coordinated and conducted with county governments. Treatments of aggressive non-native vegetation or noxious weeds on public lands would be designed to prevent their spread and to control...**
2-16	1	after partial		Add a discussion of constraints on predator control. Refer to the Proposed Plan for new text on this topic.
2-16	1	2	3	Delete second sentence. Replace with: **Buffer areas of 100 feet or more would be established from the edges of sites to protect cultural resources unless the BLM determines that circumstances justify a reduced buffer area.**
2-16	1	before 3		Insert goal statement for paleontolgical resources: ***Goal: Locate, evaluate, and classify the paleontological resources on public lands to ensure that they are given full consideration in all aspects of public land management.***
2-16	1 2	3 1-3 (including bullets)		Replace identified paragraphs (including bullets) with new paragraphs. Refer to the Proposed RMP for the new text.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-17	1	3		Delete paragraph.
2-17	2	partial	3	Add: **Developments could include facilities such as trails for non-motorized use, day use and camping areas, overlooks and waysides.**
2-17		Table 6		Table 6 in the Draft RMP is replaced by Table 25 in the Proposed RMP.
2-18	1	3	1	Delete **"including spitting"**
2-18	1	3	4,5	Smoking and spitting of chewing tobacco would be prohibited...
2-18	1	4	3	***...of these lands, while allowing for livestock grazing, mineral development and production, and other uses.***
2-18	1	6	2	***...opportunity, while allowing for livestock grazing, mineral development and production and other uses.***
2-18	1	7	3	...Opportunity Spectrum (ROS)...
2-18	2	4	1	**Until implementation plans are prepared for** public lands...
2-18	2	4	5,6	...or maintenance, **access for individuals with physical disabilities,** or oil and gas...
2-18	2	4	8	Add: **Plans for implementing OHV use restrictions (activity plans) would be developed with public participation. The plans would describe how OHV use restrictions would be applied, would clarify permitted, licensed, emergency and official use activities, and would describe the conditions under which waivers of OHV use restrictions would be considered.**
2-19		Table 7		Table 7 in the Draft RMP is replaced by Table 28 in the Proposed RMP.
2-20	1	4	3	...damage to vegetation and soil resources.
2-20	2	1	2	...by undertaking one or more of the **practices listed below. These practices apply primarily to fences built for livestock control, such as boundary fences, pasture fences, and highway right-of-way fences. Fences or exclosures constructed to keep livestock or wildlife out of certain types of facilities, such as oil and gas production facilities (e.g. pits or tank batteries), would be exempt from the fence modifications described below, unless the fence itself becomes a hazard, due to its design or condition. These fences may be modified to prevent losses to both wildlife and livestock.**
2-20	2	bullet 9		Delete bullet 9 "Acquiring privately owned fences..."

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-20	2	2	3	...in this RMP. **Modifications in existing HMPs would include public participation and review.** Actions in...
2-21	1	bullet 7	1	...grazing systems, **following consultation, cooperation and coordination with affected permittees or lessees, and other interested parties.**
2-21	1	before bullet 8		add a new bullet: **To protect property and public health and safety; or**
2-23	1	5	1	Approximately **12,008,705** acres...
2-23	2	3	1	Approximately **450,045** acres...
2-26	1	2	8	Add: **Produced water disposal would be managed in accordance with Onshore Oil and Gas Order No. 7.**
2-26	1	6	1	Approximately **3,594,110** acres...
2-29	2	2	1	Approximately **89,639** acres...
2-32	1	2	1	Approximately **22,336** acres...
2-37		Table 18		The figures opposite the entry "Rio Bonito" are misaligned; 1,000 acres of private land and 1,000 acres of state land are considered suitable for possible acquisition. The total in the State column should be **5,321.**
2-38	1	4	1	...recreational values, **or special status wildlife or plant species** would be retained.
2-38	1	7 and 3 bullets at top of next column		Replace with: **Grazing systems would be developed on allotments in the Caprock Wildlife Habitat Area (WHA), in cooperation with the permittees.**
2-41		Table 19		In the Alternative B column, change the number opposite "Mathers Research Natural Area" to **-21.** In the same column, change the numbers opposite "Total change in animal unit months..." to **-79,009** and **-79,563.** In the Alternative C column, change the number opposite "Mathers Research Natural Area" to **0.** In the same column, change the numbers opposite "Feather Cave Complex" to **-72** and the numbers opposite "Total change in animal unit months..." to **1,812** and **1,258.** In the Alternative D column, change the number opposite "Mathers Research Natural Area" to **0.** In the same column, the numbers opposite "Total change in animal unit months..." to **-35,742** and **-36,278.**
2-45	2	4	3	Delete the reference to the Rio Bonito Campground.
2-47	1	6	4	Delete the sentence beginning on line 4 and the following three bullets. Replace with: **Grazing systems would be developed in coordination with the affected permittees.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-47	2	4	2	Delete the reference to the Rio Bonito Campground.
2-48	1	3	7	Delete the reference to the Rio Bonito Campground.
2-49	1	6	1	Approximately **13,220,575** acres...
2-49	2	3	1	Approximately **530,144** acres...
2-49	2	4	7	Add: **Produced water disposal would be managed in accordance with Onshore Oil and Gas Order No. 7.**
2-52	1	2	1	Approximately **3,905,378** acres...
2-52	1	3	1	Approximately 62,247 acres (2 percent)...
2-52	2	1	1	Approximately **127,375** acres...
2-52	2	list after 2	10	Remove **Bluntnose Shiner HMA** from the list.
2-52	2	4	1-11	Replace sentences with: **A portion of the Maroon Cliffs area was determined in the Carlsbad RMP to be eligible for nomination to the National Register of Historic Places as an archeological district.** Under this alternative, the size of the **proposed district** would increase from **the** 11,783 acres **originally identified in the Carlsbad RMP** to 17,720 acres, to include **additional** important areas of cultural resources. Management of oil and gas **leasing would** be changed from no surface occupancy on 1,880 acres to no leasing on 17,720 acres. Other management prescriptions identified in the Carlsbad RMP would remain unchanged and would apply to the entire acreage of the **proposed** archeological district.
2-54		Table 23		Remove the "Black River Buckwheat Population Area" entry from the table. The revised subtotal acreage under BLM management in the "High" column is **12,127** acres. The revised total acreage in the "High" column is **57,927** acres.
2-55		Table 24		The acreages for Living Desert State Park has been corrected. The acreage for Living Desert State Park is **1,120** acres. The corrected acreage subtotal in the "High" column under "Other Agency Management" is **75,332** acres. The corrected total acreage under the "High" column is **127,139** acres.
2-56	1	2	1	Approximately **9,315,197** acres...
2-56	1	3	1	Approximately **22,434 acres** (<1 percent) would be open...
2-56	2	1	1	Approximately **402,769** acres...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-56	2	after 6		Add a new paragraph: **The federal mineral estate within the Bitter Lake National Wildlife Refuge would be closed to the leasing of solid minerals.**
2-59		Table 26		Insert the entry **"Mescalero Sands North Dune OHV Area Entrance"** in the "Areas" column under the heading "BLM MANAGEMENT." Opposite the new entry, under the "High" column, insert **400**. Change the subtotal in the "High" column under the heading "BLM MANAGEMENT" to **10,256**. Change the total under the "High" column to **21,828.**
2-60		Table 27		Under the "High" column: change the figure opposite Cocklebur Lakes National Register District to **3,000**; change the figure opposite the first Subtotal to **31,127**; and, change the total to **45,930.**
2-62		Table 29		Under the "Areas" column, add **Bitter Lake National Wildlife Refuge.** Under the "Estimated Mineral Acres" column, add **6,320.** Opposite "Total," change the number to **107,514.**
2-68	1	3		Delete paragraph and following three bullets.
2-68	2	after 1		Insert new paragraph: **In the Mathers Research Natural Area, the area closed to livestock grazing would be increased from about 91 acres to about 195 acres. Livestock grazing in the RNA would be allowed east of the access road and south of the east-west fence that roughly follows the south boundary of the RNA.**
2-68	2	3		Delete entire paragraph.
2-68	2	4	3	...recreation use and development, **to promote visitor safety and health,** and to reduce...
2-70		Table 33		The entry for the Valley of Fires Recreation Area under the heading "Private" should be **337** acres and 0 acres under the heading "State." The total acreage under the heading "Private" should be **28,813** and **37,783** under the heading "State."
2-70	1	2	7	Insert new sentence: **The percentage-ranges of the various components shown in the following tables are guidelines. The accuracy of those ranges must be confirmed through use over a period of years and in a variety of pastures. The objectives in site-specific management plans would determine whether or not one or more components of the DPC are met. Successful management would concentrate on meeting at least one, but not necessarily both, of the vegetative community objectives (percent cover or cover by percent composition).**
2-71	1	bullet 2	1	...such as fences, **exclosures,** water developments...
2-71	1	bullet 3	1	...treatments such as **rest,** changes in season...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-71	1			After bullet 4, add a new bullet: **Treatment of saltcedar, as conditions warrant. Considerations in determining whether to treat include location and density of saltcedar stands, available budget and staff to conduct treatment, and objectives of proposed treatment.**
2-71	1	3	list	Delete the Saltcedar threshold level.
2-71	2	2	1	...community type **on about 195** of the 242 acres...
2-71	2	3	list	Add: **Shinnery Oak 40 percent of vegetative cover by composition**
2-71	2	bullet 1		Replace with: **Treatments may be conducted to achieve DPC objectives in areas that are not considered suitable or occupied habitat for special status species (e.g., the sand dune lizard). Suitable and occupied habitat will remain chemically untreated until such time as the species is removed from state or federal listing, or an alternative treatment method is developed that will not negatively modify habitat.**
2-71	2	5	4	...community are to maintain the **current vegetation composition levels.**
2-71	1	5	4	Insert new sentence at end of paragraph: **This community is considered to encompass only the lava flow.**
2-72	1	2	3-6	Delete second sentence in the paragraph.
2-72	1	3	list	Delete the Saltcedar threshold level.
2-72	1	6	list	Delete the Saltcedar threshold level.
2-72	2	2	list	Delete the Saltcedar threshold level.
2-72	2	last paragraph	8	Add: **Native trees and shrubs may be planted as nursery stock for transplanting on public lands elsewhere in the Rio Bonito Valley.**
2-73		Table 34		The "Vegetative Cover By % Composition" figure for grasses should be **30-85.**
2-73		Table 34		Remove the column "% Composition by Weight."
2-73		Table 34		Replace the "note" with: **An objective of vegetation composition management would be to include 10 genera of annual and perennial fall forbs preferred by pronghorn antelope in pastures that support pronghorn or meet the Viability Index for transplants. Fall forb diversity is, in part, dependent upon precipitation, the size of the pasture, and stocking rates of domestic sheep.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-73		Table 35		Remove the column "% Composition by Weight."
2-74		Table 36		Remove the column "% Composition by Weight."
2-74		Table 37		Remove the column "% Composition by Weight."
2-75		Table 38		Add a column titled **"Vegetative Cover By % Composition"** with this information: **Grasses 55-75** **Forbs 10-20** **Shrubs 15-20** **Trees 1-10**
2-75		Table 38		Remove the column "% Composition by Weight."
2-75		Table 39		Remove the column "% Composition by Weight."
2-80	2	1	8,9	About 337 **acres of private land** on the east...
2-82	1	bullet 3		Mescalero Sands North Dune OHV Area **and entrance corridor**
2-83	1	5		At end of paragraph add: **An area of about 400 acres south of U.S. Highway 380 between the highway and the OHV area would be used as an entrance corridor to the area. This area would be open to oil and gas leasing with "no surface occupancy."**
2-84	2	3	1	**Surface disturbance would not be allowed...**
2-84	2	3	3	...case-by-case basis. **The slope restriction would not apply to livestock grazing.** Refer to Appendix 3...
2-85	1	5	10	and mineral sources, **after consultation, cooperation, and coordination with the permittee or lessee and other affected interests;** (4) construction of...
2-85	2	1	1	**After consultation, cooperation, and coordination with the permittee or lessee and other affected interests,** springs and seeps...
2-86	1	1	4,5	...preserving **water quality.** Surface water...
2-86	1	2	5	...interagency efforts **could** be made...
2-86	1	5	6,7	...preserving **water quality.** Surface water...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-86	2	1		Replace with: ***Goal: Protect existing public land water supplies, which include federal reserved water rights and state appropriative water rights. Comply with State water law to acquire and perfect water rights needed to carry out multiple-use management.***
2-86	2	2		Replace paragraph with: **Actions proposed by the BLM would be evaluated for potential effects on water resources. The New Mexico State Engineer Office (SEO) would be consulted to ensure that BLM water rights are maintained, and that other users' water rights are not adversely affected.**
2-87	1	heading		Special Status Species **Habitat Management**
2-87	1	1	1-4	Replace sentence with: **Provide maximum protection for all federal and state listed species, and federal candidate species, and their habitats on public lands.**
2-89	1	following 1		Insert new paragraph following goal statement: **Riparian and wetland areas would be managed to achieve an advanced ecological status, except where resource management objectives, including proper functioning condition, would require an earlier successional stage. The objective of management would be to improve riparian and wetland habitat on public lands that is nonfunctioning or functioning at risk, and maintain habitat that is in proper functioning condition. Management would be conducted even if influenced by factors outside of the BLM's control or management, such as flow regulations or channelization, that contribute to unacceptable conditions.**
2-89	2	5	1	...would be employed, **following coordination with affected landowners,** to accomplish...
2-90	2	bullet 2	3,4	Delete the reference to the Rio Bonito Campground and screening trees around the campground.
2-90	2	bullet 3	5,6	...by prohibiting **the use of heavy equipment** and retardant drops...
2-90	2	bullet 3	7	Add new sentence: **The use of light engines would be allowed, keeping off-road use to the minimum needed to fully suppress the fire.**
2-91	2	3	1	...of state land and **1,600** acres of...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-92	1	following 2		Add new paragraph: **The ACEC generally would continue to be open to waterfowl hunting, but hunting may be limited to certain areas. A closure to waterfowl hunting on public lands within one-half mile of the sandhill crane roost at the Southwest Pond would be proposed to the New Mexico Department of Game and Fish, in order to protect that important crane roosting area. Other human disturbances on public lands in that zone would be closed or restricted from October through March. Other areas within the ACEC could be restricted or closed to hunting in the future. Any actions involving hunting, hunting restrictions, or special designations, would be coordinated with the New Mexico Department of Game and Fish. Fences could be constructed around the Southwest Pond to delineate the restricted area, and on other lands that may require special management.**
2-94	1	1	1	As many as **1,320** acres...
2-94	2	2		Replace paragraph with: **Existing recreation facilities would continue to be maintained and upgraded as needed to meet health and safety standards. The development of a campground, including location, size and types facilities, would be considered during the preparation of a comprehensive ACEC/SRMA management plan.**
2-94	2	bullet 2		...no closer than 300 **yards of any** seeps or springs, man-made water hole, water well or watering tank **used by wildlife or domestic livestock.**
2-95	2	1	3,4	Delete the reference to the Rio Bonito Campground and screening trees around the campground.
2-97		Table 41		Table 41 in the Draft RMP is replaced by Table 17 in the Proposed RMP.
2-97		Table 42		Table 42 in the Draft RMP is replaced by Table 27 in the Proposed RMP.
2-98	1	6	1	Approximately **13,250,494** acres...
2-98	2	2	1	Approximately **130,174** acres...
2-98	2	3	1	Approximately **454,332** acres...
2-98	2	4	8	Add: **Produced water disposal would be managed in accordance with Onshore Oil and Gas Order No. 7.**
2-98	2	7	1	Approximately **3,938,081**...
2-99	1	1	1	Approximately **69,671** acres...
2-99	2	1	1	Approximately **87,248** acres...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-100		Table 44		The acreages for Brantley Reservoir and Living Desert State Park have been corrected. The corrected acreage for Brantley Reservoir is **21,000** acres. The corrected acreage for Living Desert State Park is **1,120** acres. The corrected acreage subtotal in the "High" column under "Other Agency Management" is **49,384** acres. The corrected total acreage under the "High" column is **69,671** acres.
2-102	1	list after 1	10	Remove **Bluntnose Shiner HMA** from the list.
2-102	2	2		Replace paragraph with: **A portion of the Maroon Cliffs area was determined in the Carlsbad RMP to be eligible for nomination to the National Register of Historic Places as an archeological district. Under this alternative, the proposed district would remain unchanged from its current configuration and management. Refer to Table 44 and Map 17.**
2-103	1	following 7		Add a new paragraph: **The federal mineral estate within the Bitter Lake National Wildlife Refuge would be closed to the leasing of solid minerals.**
2-107		Table 50		Under the "Areas" column, add **Bitter Lake National Wildlife Refuge.** Under the "Estimated Mineral Acres" column, add **6,320.** Opposite "Total," change the number to **106,691.**
2-107		Table 51		Some of the figures are misaligned; all figures should be in the column under the heading "Estimated Acres."
2-108		Table 53		Some of the figures are misaligned; all figures should be in the column under the heading "Estimated Acres."
2-110	2	bullet 2	1	...such as fences, **exclosures,** water developments...
2-110	2	bullet 3	1	...treatments such as **rest,** changes in season...
2-110	2			After bullet 4, add a new bullet: **Treatment of saltcedar, as conditions warrant. Considerations in determining whether to treat include location and density of saltcedar stands, available budget and staff to conduct treatment, and objectives of proposed treatment.**
2-114	1	2	1	Replace first sentence with: **An 86-mile route along State Highway 246 from Roswell to Capitan would be developed and designated a Back Country Byway and a Lands Management Highway.**
2-114	1	2	3,4	Additional byways **or land management highways** would be identified...
2-116	2	1	1	**Surface disturbance would not** be allowed...
2-116	2	1	6	...case-by-case basis. **The slope restriction would not apply to livestock grazing.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-116	2	2	10	...and mineral sources, **after consultation, cooperation, and coordination with the permittee or lessee and other affected interests;** (4) construction of...
2-117	1	4	1-3	Replace sentence with: **Provide protection and recovery for all federal and state listed species, and federal candidate species.**
2-123	2	bullet 3	2	Delete the reference to the Rio Bonito Campground.
2-125	1	6	1	Approximately **13,220,870** acres...
2-125	2	2	1	Approximately **119,879** acres...
2-125	2	3	2	Approximately **494,251** acres...
2-125	2	4	7	Add: **Produced water disposal would be managed in accordance with Onshore Oil and Gas Order No. 7.**
2-125	2	7	1	Approximately **3,906,920** acres...
2-126	2	1	1	Approximately **82,267** acres...
2-127		Table 57		The acreage for Living Desert State Park has been corrected and the entry for the park has been placed under the heading "Other Agency Management," instead of "BLM Management." The acreage for Living Desert State Park is **1,120** acres. The corrected subtotal in the "High" column under "BLM Management" is **31,747** acres. The corrected subtotal in the "High" column under "Other Agency Management" is **46,920** acres. The total acreage in the "High column is **78,667** acres.
2-128	1	1	1	Approximately **105,813** acres...
2-128	1	list after 2	10	Remove **Bluntnose Shiner HMA** from the list.
2-128	1	4	1-9	Replace sentences with: **A portion of the Maroon Cliffs area was determined in the Carlsbad RMP to be eligible for nomination to the National Register of Historic Places as an archeological district.** Under this alternative, the size of the **proposed district** would increase from the 11,783 acres **originally identified in the Carlsbad RMP** to 17,720 acres, to include **additional** important areas of cultural resources. Management of oil and gas **leasing** would be changed from no surface occupancy on 1,880 acres under Alternative A to no surface occupancy on 6,840 acres and no leasing on 10,880 acres.
2-131		Table 60		Add the Billy the Kid Recreation Site, 80 acres, to the table, in the "High" column, under BLM management. The revised subtotal of acreage under BLM management is **25,507** acres. The revised total acreage in the "High" column is **37,079** acres.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-134	1	following 3		Add a new paragraph: **The federal mineral estate within the Bitter Lake National Wildlife Refuge would be closed to the leasing of solid minerals.**
2-135		Table 63		Under the "Areas" column, add **Bitter Lake National Wildlife Refuge.** Under the "Estimated Mineral Acres" column, add **6,320.** Opposite "Total," change the number to **109,751.**
2-137		Table 67		The entry for the Valley of Fires Recreation Area under the heading "Private" should be **337** acres and 0 acres under the heading "State." The total acreage under the heading "Private" should be **22,548** and **42,696** under the heading "State."
2-139	1	bullet 1	1	...such as fences, **exclosures,** water developments...
2-139	1	bullet 2	1	...treatments such as **rest,** changes in season...
2-139	1			After bullet 3, add a new bullet: **Treatment of saltcedar, as conditions warrant. Considerations in determining whether to treat include location and density of saltcedar stands, available budget and staff to conduct treatment, and objectives of proposed treatment.**
2-142	1	3	8,9	About **337 acres of private land** on the east...
2-142	2	3	1	Replace first sentence with: **An 86-mile route along State Highway 246 from Roswell to Capitan would be developed and designated a Back Country Byway and a Lands Management Highway.**
2-142	2	3	3,4	Additional byways **or land management highways** would be identified...
2-145	1	3	5	Replace sentence 2 with: **The development of a trail into or across the lava flow from the Valley of Fires Campground would be considered, as well.**
2-145	2	1	1	**Surface disturbance would not** be allowed...
2-145	2	1	3	...case-by-case basis. **The slope restriction would not apply to livestock grazing.** Refer to Appendix 3...
2-145	2	2	11	...and mineral sources, **after consultation, cooperation, and coordination with the permittee or lessee and other affected interests;** (4) construction of...
2-146	1	1	6-10	Replace sentence with: **Water quality standards more stringent than state and federal standards would not be imposed if an increased economic cost would be incurred.**
2-146	1	3	6-10	...or federal authority. **Water quality standards more stringent than state and federal standards would not be imposed if an increased economic cost would be incurred.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-146	2	1	1-4	Replace sentence with: **Provide protection and recovery for all federal and state listed species, and federal candidate species, and their habitats on public lands.**
2-147	1	4	5	...a level of **livestock grazing and** mineral development...
2-148	1	partial	2,3	...allowing for **livestock grazing and** mineral development...
2-148	2	3	2,3	Allow for **livestock grazing and** mineral development...
2-150	1	3	4	...application of chemicals, **except that chemicals would not be applied aerially.**
2-151	1	1	2	...enlarged by about **600** acres by realigning...
2-151	1	1	10	Add: **Maintenance and replacement of existing range developments, such as fences or pipelines, would be allowed.**
2-151	2	8	2	Delete the reference to the Rio Bonito Campground.
2-152	1	after bullet 3		Add a new bullet: **Considering the development of a campground, including location, size and types facilities, during the preparation of a comprehensive ACEC/SRMA management plan.**
2-153	1	6	1	Approximately **13,215,841** acres...
2-153	2	1		Replace paragraph with: **As a result of the requirements described above, some leasing stipulations currently available for use on new leases would be rescinded or would be replaced by revised stipulations, in both the Carlsbad and Roswell resource areas. Refer to Table 2 for a comparison of leasing stipulations. Leasing stipulations on leases already issued would not be affected.**
2-153	2	2	1-3	Approximately **117,633** acres...would be open to leasing, **with a No Surface Occupancy stipulation attached to new leases.**
2-153	2	3	1	Approximately **501,526** acres...
2-153	2	4	2,3	...the Pecos River. **Additionally, these pits would not be allowed** within 100-year floodplains or within **up to** 200 meters...
2-153	2	4	7	Add: **Produced water disposal would be managed in accordance with Onshore Oil and Gas Order No. 7.**
2-153	2	5	4-7	...fertilizer, **may** be used to **enhance** the reclamation of pits, roads and pads to provide for maximum ground and surface water protection. The **ripping or** removal...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-154	1	2	1	Approximately **3,907,156** acres (95 percent)...
2-154	1;2	2;partial	5;1,2	...includes controlled surface use restrictions **and areas affected by the Surface Use and Occupancy Requirements.**
2-154	2	1	1	Approximately **78,327** acres (2 percent)...would be open to leasing with a **No Surface Occupancy stipulation attached to new leases.**
2-154		Table 69		Table 69 in the Draft RMPA is replaced by Table 4 in the Proposed Plan.
2-155		Table 70		Table 70 in the Draft RMPA is replaced by Table 5 in the Proposed Plan.
2-156	1	1	1	Approximately **109,517** acres...
2-156	1	list after 2	10	Remove **Bluntnose Shiner HMA** from the list.
2-156	1	4		Replace paragraph with: **A portion of the Maroon Cliffs area was determined in the Carlsbad RMP to be eligible for nomination to the National Register of Historic Places as an archeological district. In this plan,** the size of the **proposed district** would increase from **the** 11,783 acres **originally identified in the Carlsbad RMP** to 17,720 acres, to include **additional** important areas of cultural resources. Management of oil and gas **leasing** would be changed from no surface occupancy on 1,880 acres under **current management** to no surface occupancy on 6,840 acres and no leasing on 10,880 acres. Other management prescriptions identified in the Carlsbad RMP would remain unchanged and would apply to the entire acreage of the **proposed** archeological district. Refer to Tables **5** and **6,** and Map **5.**
2-156	2	1	1	Approximately **9,308,685** acres (96 percent)...
2-156	2	3	1-3	Approximately **39,306 acres** (< 1 percent) would be open to leasing with a **No surface Occupancy stipulation attached to new leases.**
2-156	2	4	1	Approximately **392,009** acres (4 percent)...
2-157		Table 71		Table 71 in the Draft RMPA is replaced by Table 6 in the Proposed RMPA.
2-157		Table 72		Table 72 in the Draft RMPA is replaced by Table 8 in the Proposed RMPA.
2-158		Table 73		Table **73** in the Draft RMP is replaced by Table 9 in the Proposed RMP.
2-159		Table 74		Table **74** in the Draft RMP is replaced by Table 10 in the Proposed RMP.
2-160		Table 75		Table 75 in the Draft RMP is replaced by Table 11 in the Proposed RMP.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-161	1	after 3		Insert a new paragraph: **The federal mineral estate within the Bitter Lake National Wildlife Refuge would be closed to the leasing of solid minerals. Refer to Table 12 and Map 11.**
2-161	1	after 3		Insert a new paragraph: **The federal mineral estate along the Canadian River and major tributaries in Quay County (totalling about 4,900 acres) would be closed to the leasing of solid minerals. Refer to Table 12.**
2-161	1	4	4	...**adverse** impacts to public health...
2-161	1	6	1-2	...at Fort Stanton **except for the Feather Cave Archeological Complex** would be open to the **discretionary** disposal...
2-161	2	4		Delete paragraph. (See entry in this table for page 2-14, col. 1, para. 5.)
2-161	2	after 5		Insert new paragraphs: **Retention** **To facilitate the planning process, the Roswell Resource Area was divided into three zones, based on land ownership patterns (see Map 4). Zone 1 includes the better-blocked public surface lands in Chaves, Lincoln, Guadalupe and DeBaca counties. Zone 2 includes the scattered public lands in Chaves, Lincoln, DeBaca, and Guadalupe counties. Zone 3 includes the very scattered lands in Curry, Quay, and Roosevelt Counties.** **In Zone 1, the management philosophy is to retain the public lands in federal ownership. However, exchanges may be used to create better-blocked land ownership patterns and facilitate better resource management. Sales and disposals for public purposes also could be used to facilitate better management in Zone 1, in some cases. Lands acquired anywhere in the resource area would be managed for retention, irrespective of their location.** **In Zone 2, the management philosophy is to dispose of public lands, primarily through exchange. Sales and disposals for public purposes also could be used, in some cases. When possible, exchanges of public lands for private lands would be conducted in the same county, to minimize the impacts to PILT payments and property taxes. In Zone 3, the management philosophy is to dispose of the public lands either through exchange or sale.** **Lands in Zones 2 and 3 identified for retention during the inventory, planning, or land disposal processes, would be managed as if they are in Zone 1. Reasons for retention include the presence of T&E habitat, critical wildlife habitat, unique historical or cultural resources, or riparian areas. Criteria for determining if public lands should be retained are listed in Appendix 8.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-161	2	6		Replace paragraph with: **About 3,000 acres of private or state lands in the vicinity of Fort Stanton would be considered for acquisition to enhance management in that area.**
2-161	2	7	1-4	Over the life of the plan, the acquisition of **about 75,000** acres of non-federal lands or interests in non-federal lands, **including those in the Fort Stanton area,** would be considered on a case-by-case basis...
2-162		Table 76		Table 76 in the Draft RMP is replaced by Table 12 in the Proposed RMP.
2-162		Table 77		Table 77 in the Draft RMP is replaced by Table 13 in the Proposed RMP.
2-163		Table 78		Table 78 in the Draft RMP is replaced by Table 14 in the Proposed RMP.
2-163		Table 79		Table 79 in the Draft RMP is replaced by Table 15 in the Proposed RMP.
2-164		Table 80		Table 80 in the Draft RMP is replaced by Table 16 in the Proposed RMP.
2-165	1	1	8	...tracts totalling **110,324** acres...
2-165	1	3	5-7	Replace with: **Wildlife habitat and watershed management needs would be emphasized.**
2-165	1	4		Delete paragraph and the three bullets following the paragraph.
2-165	2	after 2		Insert new paragraph: **In the Mathers Research Natural Area, the area closed to livestock grazing would be increased from about 91 acres to about 195 acres. Livestock grazing in the RNA would be allowed east of the access road and south of the east-west fence that roughly follows the south boundary of the RNA.**
2-165	2	3	3	...recreation use and development, to **promote visitor safety and health,** and to reduce...
2-165	2	5	7	Insert new sentences: **The percentage-ranges of the various components shown in the following tables are guidelines. The accuracy of those ranges must be confirmed through use over a period of years and in a variety of pastures. The objectives in site-specific management plans would determine whether or not one or more components of the DPC are met. Successful management would concentrate on meeting at least one, but not necessarily both, of the vegetative community objectives (percent cover or cover by percent composition). Seeding mixtures under DPC would emphasize the use of native species and avoid noxious weeds and exotic species.**
2-165	2	5	8	...Appendix 11 **in the Draft Roswell RMP** for more information...
2-166	1	bullet 2	1	...such as fences, **exclosures,** water developments...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-166	1	bullet 3	1	...treatments such as **rest,** changes in season...
2-166	1	2		After bullet 4, add a new bullet: **Treatment of saltcedar, as conditions warrant. Considerations in determining whether to treat include location and density of saltcedar stands, available budget and staff to conduct treatment, and objectives of proposed treatment.**
2-166	2	1	list	Delete the Saltcedar threshold level.
2-166	2	3	1	...community type on **about** 195 of the 242 acres...
2-166	2	4	list	Add: **Shinnery Oak 40 percent of vegetative cover by composition**
2-166	2	bullet 1		Replace with: **Treatments may be conducted to achieve DPC objectives in areas that are not considered suitable or occupied habitat for special status species (e.g., the sand dune lizard). Suitable and occupied habitat would remain chemically untreated until such time as the species is removed from state or federal listing, or an alternative treatment method is developed that would not negatively modify habitat.**
2-167		Table 81		Table 81 in the Draft RMP is replaced by Table 19 in the Proposed RMP.
2-167		Table 82		Table 82 in the Draft RMP is replaced by Table 20 in the Proposed RMP.
2-168	1	1	4	...community are to maintain the **current vegetation composition levels.**
2-168	1	1	4	Insert new sentence at end of paragraph: **This community is considered to encompass only the lava flow.**
2-168	1	5	3-6	Delete second sentence of paragraph.
2-168	1	6	list	Delete the Saltcedar threshold level.
2-168	2	2	list	Delete the Saltcedar threshold level.
2-168	2	4	list	Delete the Saltcedar threshold level.
2-169		Table 83		Table 83 in the Draft RMP is replaced by Table 21 in the Proposed RMP.
2-169		Table 84		Table 84 in the Draft RMP is replaced by Table 22 in the Proposed RMP.
2-170		Table 85		Table 85 in the Draft RMP is replaced by Table 23 in the Proposed RMP.
2-170		Table 86		Table 86 in the Draft RMP is replaced by Table 24 in the Proposed RMP.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-171	1	2	8	Add: **Native trees and shrubs may be planted as nursery stock for transplanting on public lands elsewhere in the Rio Bonito Valley.**
2-171	1	4	3-6	Replace sentence with: **Livestock grazing would be managed on the Rio Bonito acquired lands so that a minimum of 55 percent of annual plan production would remain for plant community maintenance and wildlife use.**
2-171	1	5		Replace the goal statement with: ***Continue** the protection of, and **increase** the knowledge derived from, significant archeological and historic properties known now and those discovered in the future, **while providing for livestock grazing, mineral development, and other uses.***
2-171	1	5		Delete the paragraph.
2-171	2	1	2,3	...would be **expected to be** managed...
2-171	2	2	2,3	...would be **expected to be** managed...
2-171	2	3	2,3	...would be **expected to be** managed...
2-172	1	bullet 1		Replace with: **oil and gas: lease with no surface occupancy**
2-172	1	bullet 7		Replace with: **oil and gas: lease with no surface occupancy**
2-173		Table 87		Table 87 in the Draft RMP is replaced by Table 26 in the Proposed RMP.
2-174	1	1	5-8	...criteria for conservation. **If Tract 5 is acquired, an** opportunity for interpretation is the early Hispanic community of Las Chosas, **which** would require extensive excavation and reconstruction.
2-174	1	3	2,3	...UFO crash site(s). **The most commonly discussed locations are represented on maps in this document. Irrespective of location, if** such an **event**...
2-174	1	4	2-4	...*and experiences. **Protect** the health*...
2-174	2	1	8,9	About **337 acres of private land** on the east...
2-174	2	2	2	...recreational use. **All low-intensity recreation activities, including hunting, would be considered during development of a site-specific management plan.** Recreation activities...
2-174	2	2	7	...include **graveled** access...
2-174	2	5	1	Replace first sentence with: **An 86-mile route along State Highway 246 from Roswell to Capitan would be developed and designated a Back Country Byway and a Lands Management Highway.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-174	2	5	3,4	Additional byways **or lands management highways** would be identified...
2-175	1	bullet 3		Mescalero Sands North Dune **OHV Area and entrance corridor**
2-175	2	5		**Surface disturbance would not be allowed within up to** 200 meters of known cave entrances, passages or asoects of significant caves, or significant karst **features.** Refer to Appendix 3 for more information on this **requirement.**
2-176	1	5	2	...approximately **1,553** acres...
2-176	1	5	6	Insert new sentences: **An area of about 400 acres south of U.S. Highway 380 between the highway and the OHV area would be used as an entrance corridor to the area. This area would be open to oil and gas leasing with "no surface occupancy."**
2-176	1	5	10	...potable water, **and boundary signing.** Livestock...
2-176	2	1	6,7	...through **two parcels of state land** to provide access...
2-176	2	1	12	Add: **Boundary signs would be installed.**
2-176	2	3	3	...acquired lands **(Tracts 1-4)** would be designated...to protect riparian values. **Tract 5, if acquired, also would be designated limited to designated roads and trails.**
2-177	2	1	5	Replace sentence 2 with: **The development of a trail into or across the lava flow from the Valley of Fires Campground would be considered, as well.**
2-177	2	2		Replace sentences 1 and 2 with: **Painting of oil field equipment and structures, and other surface facilities or equipment approved by the BLM would be conducted according to the requirements of Notice to Lessees (NTL) 87-1, New Mexico.**
2-178	1	1		Replace paragraph with: **Surface disturbance would not be allowed on slopes over 20 percent or on fragile soils. The slope restriction would not apply to livestock grazing. Refer to Appendix 3 for more discussion of this requirement.**
2-178	2	1	10	...and mineral sources, **after consultation, cooperation, and coordination with the permittee or lessee and other interested parties;** (4) construction of...
2-178	2	2	1	**After consultation, cooperation, and coordination with the permittee or lessee and other interested parties,** springs and seeps...
2-179	1	1	4	Remove: **(WQCC 91-1, Amendment 1)**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-179	1	2	6-10	Replace sentence with: **Exceptions would be possible when water quality standards more stringent than state and federal standards would result in increased economic costs.**
2-179	1	3	4,5	...preserving **water quality**. Surface water quality...
2-179	1	4	5	...interagency efforts **could** be made...
2-179	2	partial	2-5	...specifically exempted by state or federal authority, **or when water quality standards more stringent than state and federal standards would result in increased economic costs.**
2-179	2	1	6,7	...would be on preserving **water quality**. Groundwater quality...
2-179	2	3		Replace with: ***Goal: Protect existing public land water supplies, which include federal reserved water rights and State appropriative water rights. Comply with State water law to acquire and perfect water rights needed to carry out multiple-use management.***
2-179	2	4		Replace paragraph with: **Actions proposed by the BLM would be evaluated for potential effects on water resources. The New Mexico State Engineer Office (SEO) would be consulted to ensure that BLM water rights are maintained, and that other users' water rights are not adversely affected.**
2-180	2	bullet 2	2	...water marketing, **leasing**, or other coordinated efforts...
2-181	1	1		Replace with: **Goal: Provide protection and recovery for all federal and state-listed species. Manage occupied and potentially suitable habitat for federal and state-listed species on public land to maintain or enhance populations. Manage habitat for federal candidate species to avoid degrading habitat and further listing by either state or federal governments while allowing for mineral development and production, livestock grazing, and other uses.**
2-181	1	after 1		Add new paragraph: **Refer to Appendix 17 for listing of Special Status Species occurring or potentially occurring in the Roswell Resource Area.**
2-181	1	after 2		Add new paragraph: **Prairie dog towns support several special status species, including the Arizona black-tailed prairie dog, western burrowing owl, mountain plover, and ferruginous hawk. The towns provide potential habitat for black-footed ferrets. Prairie dog towns would be protected from major surface disturbing activities, such as rights-of-way, and road or facility construction. Surface disturbance would not be allowed within prairie dog towns (refer to Appendix 3). Existing populations of prairie dogs would be maintained by not allowing control measures to be conducted in prairie dog towns by APHIS-ADC or grazing allottees. Maintenance of existing developments would be allowed on a case-by-case basis.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-181	1	after 2		Add new paragraph: **The construction of fence exclosures or barriers would be considered in crucial or critical habitat for federal threatened and endangered, federal candidate, or state-listed wildlife and plant species to protect all or portions of occupied habitat, specific populations, or to provide for scientific research on a species and its habitat.**
2-181	1	after 2		Add new paragraph: **The federal mineral estate along the Canadian River in Quay County (totalling about 4,900 acres), would be managed to support protection of habitat for the Arkansas River shiner. Management would include the application of the surface use and occupancy requirements (Appendix 3), closure to the leasing of solid minerals, possible closure to the disposal of mineral materials, and restrictions on the exploration for and development of locatable minerals. Use restrictions would be applied as needed to protect habitat. As a result, the entire range of restrictions may not be applied to every acre of federal mineral estate. These practices could be applied to major tributaries of the Canadian, as well, if needed to protect shiner habitat.**
2-181	1	3	5	*...and expansion on public land, while providing for livestock grazing, mineral development and production, and other uses.*
2-181	1	after 3		Add new paragraph: **The construction of fence exclosures or barriers would be considered to protect special habitat features such as wildlife waters, springs, natural mineral licks, significant lesser prairie chicken booming grounds, or to provide for scientific research on a species and its habitat.**
2-181	1	5		Replace paragraph with: **Surface disturbance would not be allowed within up to 200 meters of existing or planned wildlife habitat improvement projects. Refer to Appendix 3 for more information on this requirement.**
2-181	1	6	4	...and the NMDGF, **following consultation and coordination with affected permittees or lessees and interested parties.** Projected transplants...
2-181	2	2	4	...period of March 15 through June 15, each year.
2-181	2	2	8	...discussion of these **requirements.**
2-181	2	4	5	*...a level of livestock grazing and mineral development...*
2-182	1	1		Replace paragraph with: **Surface disturbance would not be allowed within up to 200 meters of active heronries. Refer to Appendix 3 for more discussion on this requirement.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-182	1	after 3		Add new paragraph: **The construction of fence exclosures or barriers would be considered to protect all or portions of important wetland and riparian habitat, irrigation ponds and earthen tanks, and significant playas or alkali lakes.**
2-182	1	4	4,5	...*allowing for* ***livestock grazing and*** *mineral development*...
2-182	1	5	2	...would be **managed** on about...
2-182	2	1	1,2	**Management of habitat** would be focused...
2-182	2	1	5,6	...**developing** protective **fence** exclosures **or barriers** around **special habitat features such as** tree groves and sinkholes, **or around all or portions of important nesting areas,** and constructing raptor...
2-182	2	3	1-5	***Manage*** *aquatic habitat and associated natural diversity...while allowing for* ***livestock grazing and*** *mineral development...*
2-182	2	4	1,2	...streambank stabilization structures, **fish habitat structures,** native riparian plantings...
2-182	2	4	3	...protection **could** be allowed...
2-183	1	after bullet 7		Add new paragraph: **The construction of fence exclosures or barriers would be considered to protect all or portions of important stream reaches, springs and seeps, riparian plantings, or irrigation ponds.**
2-183	1	3	2,3	*Allow for* ***livestock grazing,*** *mineral development and production,* ***and other uses that would not*** *degrade...*
2-183	1	following 4		Insert a new paragraph following the goal statement: **Riparian and wetland areas would be managed to achieve an advanced ecological status, except where resource management objectives, including proper functioning condition, would require an earlier successional stage. The objective of management would be to improve riparian and wetland habitat on public lands that is nonfunctioning or functioning at risk, and maintain habitat that is in proper functioning condition. Management would be conducted even if factors beyond the BLM's control, such as flow regulations or channelization, contribute to unacceptable conditions.**
2-183	2	2	1	**Surface disturbance** would not be allowed...
2-183	2	2	6	...these **requirements.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-183	2	3	1-4	...reservoirs **and** earthen tanks, **important stream reaches,** and **significant** playa **and alkali** lakes **may** be enhanced by constructing **such things as** protective **fence** exclosures **or barriers,** planting native vegetation...
2-183	2	6	1	... ignited by the BLM **would be conducted, including the re-treatment of acreage previously burned, when burning conditions are appropriate (refer to the definition of "prescription" in the Glossary).** For each...
2-184	1	bullet 1	4	...to be burned**, and coordination with affected landowners and other affected interests;**
2-184	2	3	3	...full suppression **may** be employed...
2-184	2	bullet 4	3,4	Delete the reference to the Rio Bonito Campground and screening trees around the campground.
2-184	2	bullet 5	5,6	...by prohibiting **the use of heavy equipment** and retardant drops...
2-184	2	bullet 5	7	Add new sentence: **The use of light engines would be allowed, keeping off-road use to the minimum needed to fully suppress the fire.**
2-185	2	7	1	...of state land and **1,600** acres of...
2-186	1	2	3	...or chemical controls**, except that chemicals would not be applied aerially.**
2-186	1	following 6		Insert new paragraph: **The ACEC generally would continue to be open to waterfowl hunting, but hunting may be limited to certain areas. A closure to waterfowl hunting on public lands within one-half mile of the sandhill crane roost at the Southwest Pond would be proposed to the New Mexico Department of Game and Fish, in order to protect that important crane roosting area. Other human disturbances on public lands in that zone would be closed or restricted from October through March. Other areas within the ACEC could be restricted or closed to hunting in the future. Any actions involving hunting, hunting restrictions, or special designations, would be coordinated with the New Mexico Department of Game and Fish. Fences could be constructed around the Southwest Pond to delineate the restricted area, and on other lands that may be require special management.**
2-187	1	5	4	...chemical controls**, except that chemicals would not be applied aerially.**
2-187	2	5	1	Legal access to the ACEC **would be acquired,** as needed...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-187	2	7		Replace paragraph with: **The existing 1,838-acre grazing exclusion area would be eliminated. The fence on the east side of the grazing exclusion area would no longer be maintained by the BLM because the continually shifting sands render portions of the fence ineffective at any given time, adding to high maintenance costs and difficulty in driving to and through the area. Livestock grazing preference still would not be allocated on the 1,838 acres, and on about 600 additional, adjacent acres. The legal description of the entire 2,438 acres is:** **T. 12 S., R. 30 E., Sec. 1,** **T. 12 S., R. 30 E., Sec. 11, east of the existing fence,** **T. 12 S., R. 30 E., Sec. 12,** **T. 12 S., R. 31 E., Sec. 6, W1/2,** **T. 12 S., R. 31 E., Sec. 7, W1/2** **No additional range improvements or vegetation treatments geared toward livestock production would be permitted in the ACEC. Maintenance and replacement of existing range developments, such as fences or pipelines, would be allowed. Projects designed for resource enhancement or protection would be considered.**
2-188	1	2		Replace paragraph with: **Approximately 2,438 acres would be designated closed to the use of OHVs. The closure conforms to the area on which grazing preference would not be established, described above. Refer to Map A14-6. In the remainder of the ACEC, OHV use would be limited to designated roads and trails.**
2-188	1	7	1	As many as **1,320** acres...
2-188	2	1	3	...management plan objectives. **Livestock grazing would be limited or excluded in riparian pastures, highly erodible areas, cave entrances, campgrounds and day-use areas, and sensitive archeological sites.** Livestock grazing...
2-188	2	2	5	...chemicals, **except that chemicals would not be applied aerially.**
2-189	1	1		Replace paragraph with: **Existing recreation facilities would continue to be maintained and upgraded as needed to meet health and safety standards. The development of a campground, including location, size and types facilities, would be considered during the preparation of a comprehensive ACEC/SRMA management plan.**
2-189	1	bullet 1	1-4	Replace the first sentence with: **Permitting "vehicle campers" (those who drive motorized vehicles to a campsite) to drive no more than 100 feet off a BLM-designated road or trail to a campsite.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
2-189	1	bullet 2	3-5	...no closer than 300 **yards of any** seeps or springs, **man-made water hole, water well or watering tank used by wildlife or domestic livestock.**
2-189	2	after 2		Insert a new paragraph: **The BLM would recommend to the New Mexico State Game Commission that Fort Stanton be designated as a special hunt draw area or a restricted area open only to primitive hunting (bow and arrow or muzzle-loader). Additionally, vehicles would not be allowed off of designated roads or trails to retrieve downed game.**
2-190	1	5	3,4	Delete the reference to the Rio Bonito Campground and screening trees around the campground.
3-1	1	after 1		Insert new paragraphs. A revision of social and economic factors has been prepared. Refer to Chapter 3 of the Proposed Roswell RMP/Final EIS for the new text.
3-8	2	3	4	Add: **Table 88.1 summarizes the land ownership in the resource area.**
3-8				Insert **Table 88.1, Estimates of Surface Land Ownership, By County, Carlsbad Resource Area.**
3-8	2	after 4		Insert new paragraphs. A discussion of the Waste Isolation Pilot Plant has been developed. The new text is printed in Chapter 3 of the Proposed Carlsbad RMPA/Final EIS.
3-11	1	1	8	**Rock art** panels...
3-11	2	1	7,8	Replace sentence with: **These include sites with tepee rings and rare metal or glass artifacts.**
3-11	2	3	6-8	To date, as a result of over **10,500** inventories, approximately **283,000** acres, or **6.5** percent of public lands in the Carlsbad Resource Area...
3-11	2	3	9	...inventoried for cultural resources. **The majority of acreage surveyed and sites recorded are the result of, and funded by, oil and gas exploration and development.** These efforts...
3-12	1	partial	1	**...4,250** cultural resource sites.
3-13	1	4	2	...and other strata **contain** economically viable...
3-13	2	3	1	**Although some portions of the Pecos River may be unfishable, public lands along the river** serve an...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
3-15	1	following partial		Add paragraph: **A proposal to drill an oil and gas well in upper Dark Canyon in the vicinity of Lechuguilla Cave prompted the organization of a "Cave and Karst Area Task Force," in 1991. This task force was composed of members of the oil and gas industry, caving societies, and several federal and state government agencies. The primary purpose of the task force was to collaboratively address issues and make recommendations on how best to protect Lechuguilla Cave and the other cave resources of that area from the possible impacts of oil and gas development. The recommendations of the task force included the concepts of, and methods for, detecting cave resources, avoiding them when possible, and mitigating the impacts of drilling if avoidance is not successful. The work of the task force was used in developing the Dark Canyon EIS, the *Interim Guide for Oil & Gas Drilling Operations in Cave and Karst Areas*, and the Lechuguilla Cave Protection Act of 1993.**
3-21	1	5		Replace paragraph with: Almost all oil and gas **well pads** and most roads in the resource area are surfaced with caliche. **Currently**, reclamation of these areas involves leaving the caliche material on the road or pad, and ripping and reseeding the area. **Due to high temperatures and unpredictable rainfall, once the vegetative cover is lost it is difficult to reestablish.** Since caliche is quite infertile, the areas treated in this way **have** rarely regained their former productivity, and potential for rehabilitation is low.
3-21	2	1		Replace paragraph with: **Most** of the mud pits used for oil and gas drilling contain high concentrations of salt. **This is especially true for pits east of the Pecos River. Current practice involves the use of a plastic liner for the pit. After the pit has been allowed to dry, the liner is folded over, the pit is covered with soil to approximate the surrounding contour, and then the area is seeded. Since the liner does not completely encapsulate the salts, often they will leach upward through the soil. This, combined with the high temperatures and unpredictable rainfall, leads to limited plant cover in the pit area.**
3-24	1	2	2-4	Replace sentence with: **The WQCC (1994) has published a list of stream reaches that partially support designated or attainable uses, and reaches that have threatened designated or attainable uses.**
3-24	2	bullet 4	2	...riparian vegetation, **metals, un-ionized ammonia, siltation,** and streambank...
3-25	1	bullet 1	1	...water fishery, **irrigation, and livestock and wildlife watering.**
3-25	1	bullet 4	1-3	...Salinity, **metals, reduction of riparian vegetation, streambank destabilization, and other unknown causes.**
3-25	1	bullet 5	1	Replace "Uses not fully supported:" with **Uses threatened:**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
3-25	1	bullet 6	1,2	Replace "Probable Causes of Nonsupport:" with **Probable Causes of Threat:**; delete "Salinity"
3-25	2	1	1,2	Replace sentence with: **There are about 238 unlined salt water disposal pits and emergency pits throughout the east side of the resource area.**
3-26	2	1	3,4	...on a **year-round** basis.
3-30	2	2	10	Replace sentence with: **The NMDGF stocks trout in the Pecos River in the Carlsbad area at the Carlsbad Municipal Lake and the Bataan Lake.**
3-36	2	5	1	As of **December 17, 1993,** there were about **3,666** active mining claims...
3-38		Table 93		Replace with new table printed in Proposed RMP/Final EIS.
3-39	1	Table 94		Replace with new table printed in Proposed RMP/Final EIS.
3-44		Table 96		The heading of the column titled "Undetermined" should read **Total.**
3-44	2	2	4	...230 **known** sites...
3-44	2	3	8	...875 **known** sites...
3-46	1	3		Replace second sentence with: **Oil and gas development continues to play a crucial role in the economy of the area.**
3-46	1	5	1	...400 **known** sites...
3-59	2	1	3-7	Replace sentence with: **The WQCC (1994) has published a list of stream reaches that partially support designated or attainable uses, and reaches that have threatened designated or attainable uses.**
3-59	2	bullet 2	1	Delete: "Metals"
3-59	2	bullet 5	1	Delete: "Marginal"
3-59	2	2	1	...Engineer **(1995)** has declared...
3-59	2	2	8-11	Delete sentence.
3-61	1	1	3,4,7	Change the dates on the citations to 1995.
3-62		Table 101		All numbers should be aligned under the heading "Number of Sources."

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
3-63	1	before 1		Add a paragraph on elk. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-63	2	after partial		Add new paragraphs on mule deer. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-65	1	1	2	Add new sentences on pronghorn. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-65	1	after 4		Add a new paragraph on upland game birds. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-65	2	after 1		Add a new paragraph on raptors. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-65	2	2	1	About 193 species of shorebirds **and waterfowl have been recorded in the area. These species** are dependent on...
3-65	2	after 3		Add a new paragraph on shorebirds and waterfowl. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-66	1	partial	17	Add additional sentences on lesser prairie chicken. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-66	1	after partial		Add a new paragraph on lesser prairie chickens. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-66	1	heading after partial		Replace heading with: **Sand Dune Lizard**
3-66	1	1		Replace paragraph on sand dune lizards with revised and new paragraphs. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS..
3-66	1	after 1		Add a new paragraph on prairie dogs. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.
3-66				Insert **Table 101.1, Locations of Prairie Dog Towns**
3-66	1	after 2		Add a new paragraph on fish. The new text is printed in Chapter 3 of the Proposed Roswell RMP/Final EIS.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
3-68	1	6		Replace paragraph with: **There are no known federal threatened or endangered mammal species in the resource area. Other special status mammal species that occur or may occur in the resource area include the Arizona black-tailed prairie dog, swift fox, Pecos River muskrat, and several bat species, all of which are BLM sensitive species. The least shrew is a state-listed endangered species. A complete list of special status mammal species is in Appendix 17.**
3-68	2	after 2		Insert new paragraph: **The Arkansas River shiner is a native of the Canadian River drainage in the northeast portion of the planning area. The shiner population is proposed for listing as endangered. There is no BLM-administered surface along the Canadian River, but federal mineral estate exists along nine miles of the river east of Logan, New Mexico.**
3-68	2	3		Replace paragraph with:**The resource area contains about 4,960 acres of riparian or wetland habitat on public lands associated with approximately 34 miles of stream or river reaches. (see Table 102).**
3-68	2	5		Replace paragraph with: **The Overflow Wetlands Wildlife Habitat Area (WHA) is located about 16 miles southeast of Roswell. Within the boundary of the WHA are about six miles of the Pecos River, four miles of which are on public land. Also on public lands within the WHA are about 300 acres of riparian habitat associated with the Pecos River and about 700 acres of actual wetland habitat created by waters flowing from Lea Lake at the Bottomless Lakes State Park.**
3-69	2	1	6	Add a new sentence: **Refer to Table 102.1 for the locations of these features.**
3-69	2	2	1	...about 21 springs or seeps **on public lands** in the resource...
3-69	2	2	5	Add a new sentence: **Refer to Table 102.2 for the locations and names of these springs and seeps.**
3-69		Table 102		Replace with new table printed in Proposed RMP/Final EIS.
3-69				Insert **Table 102.1, Playa Lake Locations**
3-69				Insert **Table 102.2, Locations of Springs**
3-71	1	3	4	Replace "dunes sagebrush lizard" with **sand dune lizard**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
3-71	1	5	2	...east of Roswell. **The 24,519-acre refuge includes the 9,620-acre Salt Creek Wilderness, the 10,090-acre Bitter Lake Group National Natural Landmark, the 700-acre Lake Saint Francis Research Natural Area, the 300-acre Bitter Lake Natural Area, and the 2-acre Inkpot Research Natural Area. There are 6,320 acres of federal mineral estate in the refuge. The refuge is** administered...
3-71	1	after 6		Add a discussion of predator control. Refer to the Proposed Plan/FEIS, Chapter 3 for the new text and tables on this topic.
3-71	2	after 4		Replace the discussion of socioeconomics in the Roswell Resource Area (pages 3-71 through 3-73 of the Draft RMP) with new text. Refer to Chapter 3 in the Proposed Plan for the new text.
3-77	1	2	1,2	...allotments 5051, 5053, 5063, and **5065 are in** the Mescalero Sands...
3-77	1	3	3	Replace "dunes sagebrush lizard" **with sand dune lizard**
4-1				Chapter 4 of the Draft RMP/RMPA/EIS has been rewritten for the Proposed Plans/Final EISs. The text in the Proposed Plan relates only to the impacts of the Proposed Plan. Comments made on Chapter 4 of the Draft by BLM or public reviewers have been addressed. Comments relating to the impacts of the Proposed Plan have been incorporated in the revised text. Comments relating to Draft RMP/RMPA alternatives that did not become part of the Proposed Plan are listed in this table. The changes are documented below in the entries that have page numbers beginning with "4-".
4-3	2	partial	1	These **cultural survey** costs...
4-3	2	2	4-6	...costs of **15 to 30** percent per mile...and long term, **based on variables such as terrain, type and size of pipe, and construction costs which would vary by contractor.**
4-4	1	1	11	...with potash mining, **and some of the 280 approved wells were not drilled because restrictions, such as directional drilling or drilling from islands, made them uneconomical.**
4-4	2	3	6	...slopes, **prairie dog towns,** and springs...
4-8	1	after 3		Add a new paragraph: **Under Alternative E, the effect of implementing surface use restrictions in prairie dog towns to reduce or eliminate surface disturbance would be the same as those described for other lands with surface occupancy limitations. The limitations in prairie dog towns could be applied as leasing stipulations on new leases or as conditions of approval on use authorizations. Because of the small number of acres involved and the limited extent of the prairie dog towns, the effect of the restriction is not expected to be significant.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
4-17	2	insert new para. after para. 1		**The construction of raptor nesting platforms in the Macho WHA would favor populations of resident raptors, such as golden eagles, and migratory raptors, such as bald eagles. Impacts would be greatest during the lambing seasons of sheep and goats. Most operators currently try to arrange for the lambing season to occur after the migrating bald eagles have moved through the area. Predation of young livestock may increase if locations for proposed nesting platforms are not carefully considered. Losses to raptors do occur, but at low levels, according to Animal Damage Control records.**
4-18	1	after 2		Add new paragraph: **Constructing exclosures or barriers to protect wildlife habitat or special habitat features could affect livestock grazing in some cases, depending on the locations of the structures, the acreage each structure precludes from grazing, and the number of structures within an allotment. Exclosures or barriers could disrupt the layout of pastures within an allotment, disrupt established livestock movement patterns which would alter utilization patterns, or make livestock gathering and pasture rotations difficult. A secondary benefit in some cases would be that data on plant communities could be gathered to show the differences between vegetation and use inside and outside an exclosure. The number of structures constructed over the life of the plan is likely to be small, because of the cost of labor and materials (as much as $4,000 a mile) and continuing maintenance cost would limit the use of these structures to only the most important sites or areas. Thus, the impacts from the use of exclosures or barriers would not be significant in terms of the entire resource area. Exclosures or barriers could, however, be significant to a single allotment, if there were many exclosures in a small allotment. In most cases, the acreage enclosed by a structure would not be enough to require adjustment of the livestock allocated to the allotment.**
4-18	2	1	7,8	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-18	2	1	8-10	...livestock numbers may have to be reduced temporarily or **permanently** to ensure the viability of wildlife habitat..

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
4-18	2	2		Replace paragraph with: **In treated areas, vegetation composition would change to a lower percentage of brush and a higher percentage of grasses and forbs. The ban on the use of herbicides proposed under Alternative B would affect livestock grazing opportunities because vegetation composition would not move toward a prevalence of grasses and forbs. Saltcedar control would improve opportunities for livestock grazing because species such as sacaton would flourish, resulting in improved range condition.** **Chemical treatments result in higher amounts of quality forage in shorter periods of time, when compared with other treatment methods. Under Alternative B, excluding herbicide use and relying on other treatment methods would result in higher treatment costs and more physical damage to all vegetation, instead of just to target species. Other treatment methods would cause slower responses from vegetation in meeting desired plant community objectives, if the objectives can be met at all. Brush species would continue to increase, which would cause a decrease in herbaceous forage available to livestock.**
4-18	2	after 2		Add new paragraph: **For vegetation management, exclosures are used to protect sites within a plant community that have special characteristics. The vegetation within an exclosures provides important baseline data used in documenting changes in the surrounding area from grazing and other uses. A secondary benefit of exclosures constructed for data gathering purposes is the protection of small areas of wildlife habitat from livestock grazing and other uses. The consequences of constructing exclosures for vegetation management would be the same as the previously described impacts of exclosures used to protect wildlife habitat. Again, it is likely that few exclosures would be constructed, given the costs of construction and maintenance.**
4-22	1	4		Replace paragraph with: **Excluding livestock or reducing stocking rates could benefit vegetation in the short term, in those areas proposed for livestock grazing restrictions. Eliminating livestock grazing pressure would allow plants to regain vigor and would increase forage production in the short term. Changing livestock grazing management systems could benefit vegetation by altering grazing patterns, resulting in the maintenance of plant vigor and increased forage production. An overall increase in the density of vegetation could occur, followed by a subsequent increase in vegetation litter. In the long term, vegetative production would decline slightly as litter builds up and plants become decadent. Increased litter would indirectly benefit vegetation by slowing precipitation runoff and holding moisture on the ground for longer periods. Properly managed grazing would generally be beneficial because it stimulates plant growth in healthy vegetative communities.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
4-22	2	4	5-7	...aerial application of herbicides would result in **vegetation being treated more effectively and efficiently, compared with other application methods.**
4-36	1	6	2,3	...day-use areas, **sensitive archeological sites,** interpretive trails,...
4-39	1	2	1	**Access** roads and...
4-40		Table 105		Heading of fourth column should be **Soil Loss Due to Activity As Percentage of All Sources.**
4-41	2	2		Delete paragraph
4-44	2	3	1-3	Replace first sentence with: **The treatment of saltcedar with chemicals would be limited to hand or ground applications under Alternatives D and E, and would not be allowed under Alternative B.**
4-48	1	following 1		Insert new paragraphs: **Individual oil and gas wells usually do not result in negative impacts to wildlife or wildlife habitat due to the small area of disturbance, in contrast to field or complete lease development. Wildlife can become habituated to a development over time, depending on the type of disturbances emanating from a site, such as an unmuffled pumpjack or regularly visited tank battery.** **Positive impacts from oil and gas facilities include use by wildlife of structures as perching or nesting areas and use of abandoned drill pads as booming grounds. Improved public access to areas for wildlife viewing or hunting, use of abandoned pads as livestock watering sites, and use of facilities for shade and burrowing sites for small ground-dwelling mammals and reptiles also are benefits. Additional wildlife benefits could be derived from oil and gas development if sites were managed to be wildlife and habitat-friendly. Examples include not clearing raptor nests from structures, keeping clean sites, using protective measures to prevent loss of wildlife, planting vegetation near pads, or developing water sources when suitable water is encountered during drilling and wells are subsequently abandoned.** **Overall, the magnitude of impacts to wildlife habitat depends on the development of leases or well spacing requirements. Habitat fragmentation would result from the cumulative effects of wells in a given area or lease.**
4-48	1	3	3	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-48	1	3	8,9	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-48	1	4	2,3	Replace "dunes sagebrush lizard" with **sand dune lizard**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
4-49	2	after 4		Add a new paragraph: **Under Alternative E, the application of surface disturbance limitations, in the form of Surface Use and Occupancy Requirements, to protect prairie dog towns would benefit the grassland ecosystem, special status species and biological diversity. The protections would help preserve the small number of remaining towns, which provide habitat for a number of sensitive species.**
4-51	2	2	14,15	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-52	2	2	7,8	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-62	2	3	4-8	Under Alternative D, smaller areas would be treated because chemicals would be applied by hand. Aerial application may be conducted under Alternatives C and E; larger areas would be treated.
4-63	2	1	5	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-63	2	3	6,7	Replace "dunes sagebrush lizard" with **sand dune lizard**
4-68	1	1		Insert new paragraphs on social and economic impacts beginning with the first paragraph on page 4-68. Refer to Chapter 4 of the Proposed RMP/Final EIS for the replacement text.
4-71	1	3	14,15	...to livestock grazing, the **total** production...
5-1				Chapter 5, Consultation and Coordination, has been reprinted in the Proposed RMP/RMPA/Final EIS, but has been substantially changed. Tables 107 and 108 and the list of agencies and organizations consulted have not been reprinted. Any changes in those sections are documented in this table and are listed below.
5-3	1	after 3		Insert a new entry: **Timothy R. Kreager** **Roswell Resource Area Manager (1994 to present). Management Guidance.** **A.A., New Mexico Military Institute, Roswell, NM.; B.S. and M.S., New Mexico State University, Las Cruces, NM. 22 years BLM.**
5-4	3	6	1	**B.S.**, Geology, City College of New York
5-5	2	3	1	Replace Range Conservationist with: **Rangeland Management Specialist**
5-5	2	6	1	Replace Range Conservationist with: **Rangeland Management Specialist**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
5-7	1	after 9		Insert a new entry: **Alexis C. Swoboda, P.E.** **Petroleum Engineer, Roswell District Office. Revision of the socioeconomic sections in Chapters 3 and 4 of the RMP/RMPA/EIS.** **B.S. Geology, B.S. Geological Engineering, University of Missouri-Rolla, Rolla, MO.; M.B.A., Regis College, Denver, CO. Registered Professional Engineer. 4 years BLM.**
5-7	2	9	1	Replace Range Conservationist with: **Rangeland Management Specialist**
5-8	1	after 4		Insert a new entry: **Rachel A. Stout** **BLM Volunteer (Student at Goddard High School, Roswell New Mexico). Preparation of public comment letters for publication; preparation of mailing lists.**
AP3-1		Intro. Box		Replace introduction with: **This appendix describes practices intended to be applied, when needed, to minimize surface disturbance.**
AP3-1				All occurrences in Appendix 3 of "No surface occupancy would be allowed" or "Surface occupancy would not be allowed" have been changed to **"Surface disturbance would not be allowed."**
AP3-1	1	1	5-8	Replace sentence with: **However, in the case of activities related to the development of oil and gas and other minerals, these standards could be applied to split estate in order to meet the requirements of Onshore Oil and Gas Order No. 1, federal law or regulations, or with the concurrence of surface landowners.**
AP3-1	1	2	5,6	...meet the requirements of **Onshore Oil and Gas Order No. 1,** federal law or **regulations,** or with the concurrence of surface...
AP3-1	1			Following paragraph 2, add two new paragraphs: **The intent of the Surface Use and Occupancy Requirements is to best manage mechanical surface disturbance and other effects on specified natural resources. Mechanical surface disturbance is created by the use of such things as tools and machinery. Activities such as grazing by livestock or wildlife or certain recreational pursuits (e.g., hiking) are not considered to create surface disturbance in the context of these requirements. Circumstances for waivers of the requirements have been included so that they would not be applied needlessly. Exceptions to the requirements would be considered in emergency situations involving human health and safety and the protection of the environment.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP3-1	1 (con't.)			**The basis for the "200 meter rule" used in the Surface Use and Occupancy Requirements is 43 CFR 3101.1-2, which states that, at a minimum, mitigation measures are deemed consistent with oil and gas lease rights if they do not require "...relocation of proposed operations by more than 200 meters..." The intent of the actions described in this Appendix is to comply with the regulations and allow the relocation of proposed activities to mitigate impacts, but by "no more than 200 meters", without undertaking additional NEPA analysis. The opportunity exists through the NEPA process to design mitigations of impacts that would require relocation greater than 200 meters. The "200 meter rule" simply allows relocation of an activity, such as during on-site meetings prior to APD approval, without the need for detailed NEPA analysis.**
AP3-1	1	3	1-3	The Surface Use and Occupancy Requirements **identify minimum use standards for activities around certain** natural and man-made features...
AP3-4	1	1	4	...riparian areas **and erodible soils.** An exception...
AP3-4	1	2	4	...would be considered **on a case-by-case basis** for projects...
AP3-4	2	1	19	...permitting, **or in emergency situations.**
AP3-4	2	3	1	Change heading to: **Sand Dune Lizard**
AP3-5	2	partial	1	...would be considered **on a case-by-case basis** for projects...
AP3-5	2	3	13	...permitting, **or in emergency situations.**
AP3-5	2	4	1	Change heading to: **Sand Dune Lizard**
AP3-6	2	1	2,3	...be allowed **within up to 200 meters** of the outer edge...
AP3-6	2	1	4	...riparian areas **and erodible soils.** An exception...
AP3-6	2	bullet 4	2	...protection of water **or soil** resources, **or both.**
AP3-6	2	2	4	...would be considered **on a case-by-case basis** for projects...
AP3-7	1	2	19	...permitting, **or in emergency situations.**
AP3-7	1	3	1	Change heading to: **Sand Dune Lizard**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP3-7	1	3		Replace paragraph with: **Surface disturbance would not be allowed in documented occupied habitat areas, or within up to 100 meters of suitable habitat associated with occupied habitat areas identified through field review. An exception to this restriction would be considered when an on-site evaluation of habitat extent, available species occurrence data, the proposed surface use, and proposed mitigations indicate the proposal would not affect the local population.**
AP3-8	1	2	2,3	...**would not be allowed within** up to 200 meters of the outer edge...
AP3-8	1	2	4,5	...riparian areas **and erodible soils. On a case-by-case basis,** an exception...based on **one or more** of the following...
AP3-8	1	para.2, bullet 4	2	...protection of water **or soil** resources, **or both.**
AP3-8	1	3	4	...would be considered **on a case-by-case basis** for projects...
AP3-8	2	2	7	...resource values, **or when an approved plan of operations ensures the protection of cave and karst resources.**
AP3-8 and AP3-9	2 and 1	3 and 1		The two paragraphs on prairie chickens have been revised and combined into **one** new paragraph in the Proposed Plan.
AP3-9	1	2	1	Change heading to: **Sand Dune Lizard**
AP3-9	1	2	1-4	Replace sentence with: **Surface disturbance would not be allowed in documented occupied habitat areas, or within up to 100 meters of suitable habitat associated with occupied habitat areas identified through field review.**
AP3-9	2	partial	3-5	...species occurrence data, the proposed surface use, **and proposed mitigations** indicate the proposal would not **adversely** affect **the local population.**
AP3-9	2	1		Replace with: **Visual Resource Management: Painting of oil field equipment and structures to minimize visual impacts would be conducted according to the requirements of Notice to Lessees (NTL) 87-1, New Mexico. Low profile facilities may also be required, when needed, to reduce the contrast of a project with the dominant color, line and form of the surrounding landscape. Other surface facilities or equipment approved by the BLM, such as large-scale range improvements or pipelines, would be painted, when needed, to conform with the requirements of visual resource management. Paint colors would be selected from the ten standard environmental colors approved by the Rocky Mountain Coordinating Committee. The selected paint color would match as closely as possible the predominant soil or vegetation color of the area.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP3-9	2	after 1		Insert a new paragraph: • **Prairie Dog Towns: Surface disturbance would not be allowed on public lands within known prairie dog towns or towns identified in the future. Exceptions to this requirement would be considered for maintaining existing structures or facilities. Prairie dog control would not be authorized on public lands, except in emergency situations involving public health.**
AP4-1		Intro. Box	1-4	...appendix **describes standard** conditions of approval. **When appropriate, conditions of approval may selected from this list and** be attached to use authorizations. **A check-list or other suitable means may be used to identify applicable conditions of approval.** The emphasis is ...activities, **as well.** The conditions...
AP4-2		item 7	3	...acceptable weed control methods**, which include following EPA and BLM requirements and policy.**
AP4-2		item 8	2	Delete: **at those sites**
AP4-2		heading after item 8		add **BURIED** at beginning of heading; remove **STIPULATIONS** from heading
AP4-2		item 10	1	...with a minimum cover of **_____ inches** between the top...
AP4-2		item 13	3	...Officer**, except that an earthen** berm **shall** be left...
AP4-2		item 14	2	...seed mixture (as determined **to meet Desired Plant Community objectives**).
AP4-3		item 18	2	...Sec. ****2802/2883****. The holder...
AP4-6		item 31	4	...a minimum thickness of **____ inches of _____**.
AP4-7		item 35	18	Add new sentence: **Waiver of this requirement would be considered if diligent attempts to revegetate a site have failed and the Authorized Officer determines that further attempts would be futile.**
AP4-7		item 38	4,5	Replace sentence with: **The holder is responsible for demonstrating that power pole designs not meeting these standards are "raptor safe."**
AP4-8		item 38	1	...additions **to power line structures constructed under** this authorization...
AP4-8		item 43	2	...abandonment procedures **prescribed in the grant or determined at the time of abandonment.**
AP4-8		item 47	2	...existing **facilities**, not less than...
AP4-10		item 56	1	...Sec. ****2802/2883****. The holder...

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP4-10		item 57	2	...in the amount of _____, **(minimum of $25,000) to cover the costs of plugging and reclamation.** Should the sureties...
AP4-10		item 60	2	...to contain, **at a minimum, the entire contents of the largest tank within the facility, unless more stringent protective requirements are deemed necessary by the Authorized Officer.**
AP4-11		item 63	3	...wellbore, **prescribed in the authorization or determined at the time of abandonment.**
AP4-11		item 67	2,3	... or berms **(except for a berm left over the ditch line to allow for settling back to grade),** unless otherwise approved by the Authorized Officer.
AP4-12		item 80	1,2	...inches of compacted **caliche, gravel, or other approved surfacing material.**
AP4-13		item 83B	2,3	...liquids shall be **equipped to deter entry by birds, bats, and other** wildlife, **and livestock.**
AP4-13		item 84		Replace with: **Firewalls/containment dikes are to be constructed and maintained around all storage facilities/batteries. The containment structure must have sufficient volume to contain, at a minimum, the entire contents of the largest tank within the facility/battery, unless more stringent protective requirements are deemed necessary by the Authorized Officer.**
AP4-13		item 88	1	...well is **completed,** the reserve...
AP4-13		item 88	2,3	...necessary for **operations** must be re-contoured... and **stockpiled** topsoil...
AP4-14		item 89	1	Replace with: **All open-vent exhaust stacks associated with heater-treater, separator and dehydrator units shall be modified to prevent birds and bats from entering them and to the extent practical to discourage perching and nesting.**
AP4-14		item 90	2	...filing an original and **the required number** of copies...
AP4-14		item 91		...will be **as specified in the authorization or determined at the time of abandonment.**
AP4-14		item 97	1,2	...in accordance **with BLM road standards, including the** New Mexico...
AP4-15		after item 105		Add a new heading, **HYDROSTATIC TEST WATER DISCHARGE SITES,** and three additional items numbered **106-108.** Refer to Appendix 4 in the Proposed Plan for the added text.
AP4-15		after item 105		Add a new heading, **FLOODPLAIN DEVELOPMENT,** and 10 additional items numbered **109-118.** Refer to Appendix 4 in the Proposed Plan for the added text.
AP4-15		after item 105		Add a new heading, **DRILLING RIG STORAGE,** and four additional items numbered **119-122.** Refer to Appendix 4 in the Proposed Plan for the added text.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP4-15		after item 105		Add a new heading, **GEOPHYSICAL EXPLORATION**, and 12 additional items numbered 123-134. Refer to Appendix 4 in the Proposed Plan for the added text.
AP4-15		items 106-112		Renumber the seven items under **FILMING PERMITS**, beginning with 135 and ending with 141.
AP5-1		Intro. Box		Replace first sentence with: **This appendix describes practices for detecting and avoiding significant caves and significant karst features with respect to oil and gas drilling, and for mitigating impacts to significant caves and karst when they cannot be avoided.**
AP5-1		Intro. Box	5	...Management Act, **the Federal Cave Resources Protection Act,** and the National...
AP5-1		Intro. Box		Add new sentence at end: ***The practices described here supersede those of the Draft "Interim Guide for Oil and Gas Drilling and Operations in Cave and Karst Areas" (February 1993).***
AP5-1	2	1	5	Add: **However, the emphasis of management would be on caves presently designated significant or on those designated in the future as significant, and on significant karst features. (There presently are 85 significant caves in the Carlsbad Resource Area and 99 significant caves in the Roswell Resource Area.)**
AP5-1	2	2	3,4	...**located in a high or medium** potential...
AP5-2	1	item 1	1	...karst resources **and determine their significance.**
AP5-2	2	bullet 2		Replace with: **Reorientation of the rig and related pit location.**
AP5-4	1	bullet 3		Replace with: **Reorientation of the rig and related pit location.**
AP5-6	1	3		Replace paragraph with: **The management of oil and gas operations in cave or karst areas, including approvals for drilling oil or gas wells, would be guided by procedures described below, Surface Use and Occupancy Requirements (Appendix 3), and Conditions of Approval (Appendix 4). These practices would be modified as new and cost effective technologies for cave and karst protection, become available.**
AP5-6	1	4	1,2	...the review of **BLM** or other records...
AP5-6	2	1	3,4	...would be applied, **when needed,** to minimize...
AP5-6	2	bullet 2		Delete the statement.
AP5-6	2	bullet 3		Replace with: **Reorientation of the rig and related pit location, while giving consideration to human safety.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP5-6	2	bullet 4		Delete the statement.
AP5-6	2	bullet 5	2	...**sufficient** to contain spills, **in accordance with Roswell District Conditions of Approval.**
AP5-7	1	bullet 1		Replace with: **The flaring or venting of gas to protect human safety and to better disperse the gases and eliminate possible gas ignitions;**
AP5-7	1	1	5	The **options could** include...
AP5-7	1	bullet 4	3	...fresh water mud, **foam,** or compressed air **as** a circulating medium **in zones where caves or karst are expected. Below those zones, the operator may use whatever drilling fluid is appropriate.**
AP5-7	1	bullet 6	2,3	...**A "cave-protection" casing could be required in instances when a designated significant cave would be jeopardized. The cave-protection casing** string...
AP5-7	1	bullet 7	7	...by the Operator. **The BLM would assess the consequences of the situation and work with the Operator on corrective actions to resolve the problem. If corrective actions fail, the well would be plugged.**
AP5-7	2	bullet 1	3	...methods **that are environmentally sound,** as determined...
AP5-7	2	bullet 1, item 3		Replace with: **Foam cementing techniques may be used.**
AP5-7	2	1	1	Any **corrective** actions proposed...
AP5-7	2	1	3	Add: **A decision on how to proceed would be reached within 24 hours of notification.**
AP5-7	2	2		Replace paragraph with: **Where the presence of significant caves or significant karst features are obvious or expected based on the results of detection efforts, and in lost circulation zones, constant monitoring of drilling operations by the BLM could be required.**
AP5-7	2	3		Delete paragraph
AP5-8	1	1		Replace first sentence with: **On wells within one-half mile of significant caves, annual pressure tests would be performed by the Operator on all casing annuli.**
AP5-8	2	before 1		Insert new paragraph: **The Operator would track the customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP5-8	2	1	1	Replace first sentence with: **The BLM may review data held by companies, on wells drilled in cave or karst areas, to gain information about impacts to caves and karst.**
AP5-8	2	1	6	...on the basis of **depth, relative volume, and** severity...
AP6-2		Table A6-1		This table has been revised slightly and is reprinted in the Proposed RMP.
AP7-1				Appendix 7, Rules of Conduct, has been modified substantially to include supplemental rules that became effective after the Draft Roswell RMP was published. Refer to Appendix 7 in the Proposed Roswell RMP.
AP8-1				Appendix 8, Acquisition and Disposal Criteria, has been modified slightly to address the topic of retention criteria. Refer to Appendix 8 in the Proposed Roswell RMP.
AP9-1				Appendix 9, Lands Proposed for Acquisition, has been modified to address comments made by BLM staff and the public. Refer to Appendix 9 in the Proposed Roswell RMP.
AP10-1				Appendix 10, Lands Identified for Disposal, has been modified to address comments made by BLM staff and the public. Refer to Appendix 10 in the Proposed Roswell RMP.
AP11-1		Intro. Box		Change item 4 to Data **Analysis Procedure**
AP11-1	2	1	15	See Maps 35 and 36 for general locations...
AP14-1				Appendix 14 in the Proposed Roswell RMP/EIS replaces Appendix 14 in the Draft Roswell RMP/EIS. The replacement appendix contains maps showing only ACEC management for the Proposed Plan.
AP14-23		Map A14-23		In the legend, the phrases "Proposed Acquisition-State Land" and "Proposed Acquisition-Private Land" are reversed. Proposed state-land acquisitions are represented on the map with horizontal lines.
AP15-3	2	3		Replace paragraph with: **Competitive and noncompetitive leases are issued for a term of 10 years, and remain in effect for as long as oil and gas production continues.**
AP15-3	2	4	3	...one half of which, **less an administrative fee,** is returned...
AP15-5	2	2	12,13	...as high as 120 to 150 feet.
AP15-5	2	3	12-15	Delete sentence.
AP15-7	1	1	1	The **surface** component of the drill stem...
AP15-7	1	3	2	The drilling fluid is usually **called** mud.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP15-7	2	partial	10-13	...lost circulation material **such as chopped paper or cottonseed hulls. The added materials will flow into the lost circulation area, hopefully plugging it off so that circulation can be restored.**
AP15-7	2	1	1-3	Replace with: **As the well is drilled, casing is set at selected intervals. Casing is a steel pipe about 40 feet in length with diameters from 4.5 to 20 inches.**
AP15-9	1	2	5-8	Replace sentence with: **Water and liquid hydrocarbons in gas are removed before the gas is metered and sold. Gas well gas is generally measured near the wellhead before it enters a gathering line. In some cases, gas goes through a plant or another facility for additional treatment prior to being turned into a transportation system. Gas from numerous wells is mixed in the treatment facilities or gathering lines and in turn goes directly into gas transportation systems.**
AP15-9	1	3	9	...casinghead gas, **diesel,** or propane.
AP15-9	1	4	6	...not practical, **or 3) the gas is of no commercial value.**
AP15-9	2	partial	4-6	Replace sentence with: **Earthen dikes of a size to hold the contents of the largest vessel are constructed around the tank battery, to contain an accidental spill.**
AP15-10	1	2	3,4	Replace sentence with: **Later, a well may be recompleted into a different formation.**
AP15-10	1	4	8	...BLM **may prescribe or approve** reclamation plans...
AP15-10	2	3	2,3	...surfacing with caliche **or other approved surfacing materials** and installing drainage crossings.
AP15-11	1	partial	1,2	...and whether or not the **mineral and working interest owners** are the same.
AP15-11	2	partial	6	...recirculated back to the **heater,** where heat is applied...
AP15-11	2	2	4-6	The quality of the water **and handling economics often dictate** the appropriate...
AP15-11	2	3	5	...producers face include: **hydrogen sulfide, carbon dioxide,** paraffin,...
AP15-11	2	4	8,9	Delete: **and up to the surface**
AP15-12	1	1	6	...attainable by **primary** recovery.
AP15-13	2	2	17	...time to pump. **Laminar flow requires less hydraulic horsepower and is easier to achieve.** Turbulent flow...
AP16-1				The species lists in Appendix 16 have been revised. Refer to Appendix 16 in the Proposed RMP/RMPA.

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
AP17-1				The species lists in Appendix 17 have been revised. Refer to Appendix 17 in the Proposed RMP/RMPA.
AP18-4	2	2	5	...estimated to be **38** percent.
AP18-4	2	3	1	...new oil or gas **pools** could be discovered...
AP18-7	2	after 6		Insert: **For purposes of analysis, the following are the types and estimates of new projects that would be implemented over 20 years:** **- 150 miles of water pipeline;** **- 150 water development projects, including wells, storages, troughs, or dirt tanks;** **- 75 miles of fence construction.**
AP18-9	2	5	1	...an estimated **300** prairie chicken leks...
AP18-9	2	5	5	...are **five** "core areas"...
AP18-9	2	5	list	Add a fifth entry to the list of prairie chicken core areas: **NMDGF Mgmt. Area, 4,400 acres** The acreage total changes to **249,400 acres.**
AP18-9	2	6		Replace paragraph with: **Wildfires in the Roswell Resource Area annually burn approximately 5,200 acres.**
AP18-10	1	4	7	...assumed to be three **10-kilometer** units per...
AP18-10	2	5	5	...and **300** leks in the Roswell Resource Area.
AP18-10				Following Appendix 18, add a new appendix: **Appendix 19 Decisions from Previous Planning Documents.** This appendix describes the disposition of livestock grazing management and rangeland management decisions from previous land use plans.
AP18-10				Following Appendix 18, add a new appendix: **Appendix 20 Treating Vegetation with Herbicides.** This appendix describes the policies, standards and practices for treating vegetation with herbicides.
GL-2	1	after 4		Add the definition of **"BERM."**
GL-2	2	after 1		Add the definition of **"CAVE."**
GL-2	2	after 5		Add the definition of **"CONDITION, FUNCTIONAL-AT RISK (Riparian, Wetland)."**
GL-2	2	after 5		Add the definition of **"CONDITION, NON-FUNCTIONAL (Riparian, Wetland)."**
GL-2	2	after 5		Add the definition of **"CONDITION, PROPER FUNCTIONING (Riparian, Wetland)."**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
GL-2	2	after 5		Add the definition of **"CONDITION, UNKNOWN (Riparian, Wetland)."**
GL-2	2	after 5		Add the definition of **"CONDITION OF APPROVAL."**
GL-3	2	2	10	Add a new sentence: **Seeding mixtures under DPC would emphasize the use of native species and avoid noxious weeds and exotic species.**
GL-3	2	after 5		Add the definition of **"DRASTIC."**
GL-4	1	1	7	Add new sentences: **Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors. Also, see "Threatened Species (Federal)" in the Glossary.**
GL-4	1	2		Replace definition with: **Any species or subspecies whose prospects of survival or recruitment in New Mexico are in jeopardy. Also, see "Threatened Species (State)" in the Glossary.**
GL-4	2	after 4		Add the definition of **"FEDERAL LAND."**
GL-4	2	after 6		Add the definition of **"FLOODPLAIN."**
GL-4	2	after 6		Add the definition of **"FLOWLINE."**
GL-5	1	1	1	Heading should be "FULL WILDFIRE SUPPRESSION."
GL-5	2	2	3,4	Replace with: **These include any materials meeting the Environmental Protection Agency's criteria for ignitability, corrosivity, reactivity or toxicity.**
GL-5	2	after 7		Add the definition of **"KARST."**
GL-5	2	after 8		Add the definition of **"LEASE NOTICE."**
GL-5	2	after 8		Add the definition of **"LEGAL ACCESS."**
GL-6	2	after 6		Add the definition of **"NOXIOUS WEED."**
GL-7	2	after 5		Add the definition of **"PHYSICAL ACCESS."**
GL-7	2	before 6		Add the definition of **"PIPELINE."**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
GL-8	1	3		Replace with: **Any land and interest in land owned by the United States within the several states and administered by the Secretary of the Interior through the Bureau of the Land Management, without regard to how the United States acquired ownership, except (1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos.**
GL-8	1	7	6	...wild horses or burros...
GL-9	2	before 7		Add the definition of **"SIGNIFICANT CAVE."**
GL-9	2	before 7		Add the definit on of **"SIGNIFICANT KARST."**
GL-10	1	before 5		Add the definition of **"SPECIAL HABITAT FEATURE."**
GL-10	1	6	3,4	...endangered or threatened, state-listed species, or BLM-determined priority species **(sensitive species).**
GL-10	2	before 5		Add the definition of **"SUITABILITY."**
GL-10	2	before 5		Add the definition of **"SUITABLE RANGE."**
GL-11	1	1	1	Heading should be **"THREATENED SPECIES (Federal)"**
GL-11	1	1	12	Add a new sentence: **Also, see "Endangered Species (Federal)" in the Glossary.**
GL-11	1	before 2		Add the definition of **"THREATENED SPECIES (State)."**
GL-11	1	before 3		Add the definition of **"VALUE."**
R-1	2	before entry 1		Add: **Bartsch-Winkler, Susan, editor** **1992** **Mineral and Energy Resources of the Bureau of Land Management, Roswell Resource Area, East-Central New Mexico: U.S. Geological Survey Open-file Report 92-0261, 153 pp., 40 figs., 22 tables, 14 maps, 1 appendix, map scale 1:500,000 (Superseded by U.S. Geological Survey Bulletin 2063).**
R-2	1	before entry 1		Add: **Davis, C.A., et.al.** **1979** **Habitat Evaluation of Lesser Prairie Chickens in Eastern Chaves County, New Mexico. New Mexico State University, Las Cruces, New Mexico.**

TABLE 34
TEXT CHANGES

Page	Column	Paragraph	Line	Should Be:
R-4	1	entry 1	3	...in New Mexico, **p. 166.**
R-4	1	entry 3		Delete reference and replace with: **1995** **State of New Mexico Standards for Interstate and Intrastate Streams. 20 NMAC 6.1. 51 pp.**
R-4	1	after entry 4		Add: **1994** **Water Quality in New Mexico, 1994.**
R-4	2	after entry 8		Add: **United States Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control** **1996** **Environmental Assessment (EA), Predator Damage Management in the Roswell ADC District in Southeastern New Mexico (unpublished pre-decision draft).**
R-5	2	after entry 5		Add: **1988** **Chemical Pest Control, BLM Manual Handbook H-9011-1.**
R-5	2	after entry 7		Add: **1990** **Fort Stanton Habitat Management Plan, NM-6-WHA-T5.**
R-6	1	after entry 2		Add: **1992** **Overflow Wetlands Habitat Management Plan, NM-06-WHA-T3.**

APPENDIXES

The Appendixes printed in the Draft Roswell Resource Management Plan/Environmental Impact Statement (RMP/EIS) and the Draft Carlsbad Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS) have been handled in various ways for purposes of this document (refer to the table below). Refer to the Draft RMP/RMPA/EIS for those appendixes not reprinted. Refer to Table 34 to determine the changes made to appendixes listed as "modified, not reprinted." Refer to the Proposed RMP/RMPA/Final EIS for the appendixes listed as "modified, reprinted" or "new."

TABLE A-1
LIST OF APPENDIXES

Appendix	Status
1. The Resource Management Plan Process	Not reprinted
2. Wild and Scenic Rivers Analysis	Not reprinted
3. Surface Use and Occupancy Requirements	Modified, reprinted
4. Roswell District Conditions of Approval	Modified, reprinted
5. Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas	Modified, reprinted
6. Withdrawn Lands	Modified, reprinted
7. Rules of Conduct	Modified, reprinted
8. Acquisition and Disposal Criteria	Modified, reprinted
9. Lands Identified for Acquisition	Modified, reprinted
10. Lands Identified for Disposal	Modified, reprinted

Appendix	Status
11. Desired Plant Community	Modified, not reprinted
12. Antelope Transplants in Roswell District, NM	Not reprinted
13. ACEC Relevance and Importance Criteria	Not reprinted
14. ACEC Maps	Modified, reprinted
15. Oil and Gas Operations	Modified, not reprinted
16. Special Status Species - Carlsbad Resource Area	Modified, reprinted
17. Special Status Species - Roswell Resource Area	Modified, reprinted
18. Impact Analysis Assumptions	Modified, not reprinted
19. Decisions from Previous Planning Documents	New Appendix
20. Treating Vegetation with Herbicides	New Appendix

APPENDIX 3
SURFACE USE AND OCCUPANCY REQUIREMENTS

This appendix describes practices intended to be applied, when needed, to minimize surface disturbance.

The requirements listed below would pertain to all activities conducted in the Roswell Resource Area. They would be applied primarily to the federal surface estate. However, in the case of activities related to the development of oil and gas and other minerals, these standards could be applied to split estate in order to meet the requirements of Onshore Oil and Gas Order No. 1, federal law or regulations, or with the concurrence of surface landowners.

In the Carlsbad Resource Area, these requirements would pertain only to oil and gas related activities. The standards would be applied primarily to the federal surface estate, but could be applied to split estate in order to meet the requirements of Onshore Oil and Gas Order No. 1, federal law or regulations, or with the concurrence of surface landowners. It is expected that future amendments or revisions of the Carlsbad RMP will address the use of these requirements for other activities in the Carlsbad Resource Area.

The intent of the Surface Use and Occupancy Requirements is to best manage mechanical surface disturbance and other effects on specified natural resources. Mechanical surface disturbance is created by the use of such things as tools and machinery. Activities such as grazing by livestock or wildlife or certain recreational pursuits (e.g., hiking) are not considered to create surface disturbance in the context of these requirements. Circumstances for waivers of the requirements have been included so that they would not be applied needlessly. Exceptions to the requirements would be considered in emergency situations involving human health and safety and the protection of the environment.

The basis for the "200 meter rule" used in the Surface Use and Occupancy Requirements is 43 CFR 3101.1-2, which states that, at a minimum, mitigation measures are deemed consistent with oil and gas lease rights if they do not require "...relocation of proposed operations by more than 200 meters..." The intent of the actions described in this Appendix is to comply with the regulations and allow the relocation of proposed activities to mitigate impacts, but by no more than 200 meters, without undertaking additional NEPA analysis. The opportunity exists through the NEPA process to design mitigations of impacts that would require relocation greater than 200 meters. The "200 meter rule" simply allows relocation of an activity, such as during on-site meetings prior to APD approval, without the need for detailed NEPA analysis.

The Surface Use and Occupancy Requirements identify minimum use standards for activities around certain natural and man-made features to ensure protection of those features. Specific information on those features is maintained for review at the Roswell and Carlsbad Resource Area offices.

Tables A3-1 and A3-2, for the Carlsbad and Roswell Resource Areas, respectively, estimate the acreages affected by the Surface Use and Occupancy Requirements, under the Proposed Plans. These estimates reflect the maximum amount of acreage that could be affected and are for purposes of comparison and analysis, only. The most likely situation is that the requirements will cumulatively affect only a small area.

- **Wildlife Habitat Projects:** Surface disturbance would not be allowed within up to 200 meters of existing or planned wildlife habitat improvement projects. Large-scale vegetation manipulation projects such as

TABLE A3-1
SUMMARY OF ESTIMATED ACREAGES AFFECTED BY SURFACE USE AND OCCUPANCY REQUIREMENTS CARLSBAD RESOURCE AREA PROPOSED PLAN

FOR PURPOSES OF ANALYSIS ONLY

Resource or Feature	Proposed Plan
Wildlife Habitat Projects	5,400
Raptor Nests	85,376
Slopes (All Ownerships)	92,983
Streams, Rivers, Floodplains	65,600
Playa and Alkali Lakes	17,351
Springs, Seeps and Tanks:	
Springs and Seeps	540
Tanks	8,800
Caves and Karst	55,610
Prairie Chickens (includes state lands):	
Timing requirements	460,700
Occupancy requirements	3,150
Sand Dune Lizard (Potential Habitat)	480,000

Notes:

1. For purposes of analysis, acreages represent the maximum number of acres affected by the requirements. Acreages actually affected when the requirements are applied will be substantially less than those listed.

2. Acreages are not additive, since many different features may occur in the same area (e.g., wildlife habitat projects, raptor nests, prairie chicken habitat and lizard habitat could all be in proximity). Adding acreages amounts to double- or triple-counting (or more) of the same acreage.

3. For determining the effects of these requirements on oil and gas activity, the acreages are assumed to fall completely within areas of high hydrocarbon potential. Actually, many of the areas on which the requirements would be applied are in areas of low or moderate hydrocarbon potential.

4. Acreages represent federal surface only, unless noted.

TABLE A3-2
SUMMARY OF ESTIMATED ACREAGES AFFECTED BY SURFACE USE AND OCCUPANCY REQUIREMENTS ROSWELL RESOURCE AREA PROPOSED PLAN

FOR PURPOSES OF ANALYSIS ONLY

Resource or Feature	Proposed Plan
Wildlife Habitat Projects	2,408
Raptor Nests	6,240
Slopes (All Ownerships)	260,023
Streams, Rivers, Floodplains	65,694
Playa and Alkali Lakes	8,400
Springs, Seeps and Tanks:	
Springs and Seeps	640
Tanks	8,800
Caves and Karst	26,136
Prairie Chickens:	
Timing requirements	935,000
Occupancy requirements	6,400
Sand Dune Lizard (Potential Habitat)	296,000
Prairie Dog Towns	1,422

Notes:

1. For purposes of analysis, acreages represent the maximum number of acres affected by the requirements. Acreages actually affected when the requirements are applied will be substantially less than those listed.

2. Acreages are not additive, since many different features may occur in the same area (e.g., wildlife habitat projects, raptor nests, prairie chicken habitat and lizard habitat could all be in proximity). Adding acreages amounts to double- or triple-counting (or more) of the same acreage.

3. For determining the effects of these requirements on oil and gas activity, the acreages are assumed to fall completely within areas of high hydrocarbon potential. Actually, many of the areas on which the requirements would be applied are in areas of low or moderate hydrocarbon potential.

4. Acreages represent federal surface only, unless noted.

prescribed burns would be excepted. This requirement would be considered for waiver with appropriate off-site mitigation, as determined by the Authorized Officer.

- **Raptor Nests and Heronries:** Surface disturbance would not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both. Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, would be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests would be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and would not result in continuing activity in proximity to the nest.

- **Slopes or Fragile Soils:** Surface disturbance would not be allowed on slopes over 20 percent. Exceptions would be considered for authorized mineral material extraction sites and designated OHV areas, for the installation of projects designed to enhance or protect renewable natural resources, or if a plan of operations and development which provides for adequate mitigation of impacts was approved by the Authorized Officer. Occupancy or use of fragile soils would be considered on a case-by-case basis.

- **Streams, Rivers and Floodplains:** Surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect riparian areas and erodible soils. On a case-by-case basis, an exception to this requirement may be considered based on one or more of the following criteria:

  •Additional development in areas with existing developments that have shown no adverse impacts to the riparian area as determined by the Authorized Officer, following a case-by-case review at the time of permitting.

  •Installation of habitat, rangeland or recreation projects designed to enhance or protect renewable natural resources.

  •Suitable off-site mitigation if habitat loss has been identified.

  •An approved plan of operations ensures the protection of water or soil resources, or both.

- **Playas and Alkali Lakes:** Surface disturbance would not be allowed within up to 200 meters of playas or alkali lakes. Waiver of this requirement would be considered on a case-by-case basis for projects designed to enhance or protect renewable natural resources. An exception for oil and gas development would be considered if playa lake loss was mitigated by the protection and development of another playa exhibiting the potential for improvement. Mitigation could include: installing fencing; developing a supplemental water supply; planting trees and shrubs for shelter belts; conducting playa basin excavation; constructing erosion control structures or cross dikes; or by improving the habitat in another area.

- **Springs, Seeps and Tanks:** Surface disturbance would not be allowed within up to 200 meters of the source of a spring or seep, or within downstream riparian areas created by flows from the source or resulting from riparian area management. Surface disturbance would not be allowed within up to 200 meters of earthen tanks or the adjacent riparian areas created as a result of the presence of the tanks. Exceptions to this requirement would be considered for the installation of habitat or rangeland projects designed to enhance the spring or seep, or downstream flows.

- **Caves and Karst:** Surface disturbance would not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features. Waiver of this requirement would be considered for projects that enhance or protect renewable natural resource values, or when an approved plan of operations ensures the protection of cave and karst resources.

- **Prairie Chickens:** Drilling for oil and gas, and 3-D geophysical exploration operations would not be allowed in Lesser Prairie Chicken habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, would be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. to 9:00 a.m. restriction would not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling would be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads would not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise. Exceptions to these requirements would be considered for areas of no or low prairie chicken booming activity, or unoccupied habitat, including leks, as determined at the time of permitting, or in emergency situations.

- **Sand Dune Lizard:** Surface disturbance would not be allowed in documented occupied habitat areas, or within up to 100 meters of suitable habitat associated with occupied habitat areas identified through field review. An exception to this restriction would be considered when an on-site evaluation of habitat extent, available species occurrence data, the proposed surface use, and proposed mitigations indicate the proposal would not adversely affect the local population.

- **Visual Resource Management:** Painting of oil field equipment and structures to minimize visual impacts would be conducted according to the requirements of Notice to Lessees (NTL) 87-1, New Mexico. Low profile facilities also may be required, when needed, to reduce the contrast of a project with the dominant color, line, texture, and form of the surrounding landscape. Other surface facilities or equipment approved by the BLM, such as large-scale range improvements or pipelines, would be painted, when needed, to conform with the requirements of visual resource management to minimize visual impacts. Paint colors would be selected from the ten standard environmental colors approved by the Rocky Mountain Coordinating Committee. The selected paint color would match as closely as possible the predominant soil or vegetation color of the area.

- **Prairie Dog Towns:** Surface disturbance would not be allowed on public lands within known prairie dog towns or towns identified in the future. Exceptions to this requirement would be considered for maintaining existing structures or facilities. Prairie dog control would not be authorized on public lands, except in emergency situations involving public health.

APPENDIX 4
ROSWELL DISTRICT CONDITIONS OF APPROVAL

This appendix describes standard conditions of approval. When appropriate, conditions of approval may be selected from this list and attached to use authorizations. A check-list or other suitable means may be used to identify applicable conditions of approval. The emphasis is primarily on oil and gas operations and rights-of-way, but these conditions may be applied to other activities, as well. The conditions will be used by both resource areas.

GENERAL CONDITIONS OF APPROVAL

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this authorization.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the pipeline route or on facilities authorized. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, *etc.*) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on this pipeline (unless the release or threatened release is wholly unrelated to the holder's activity on the pipeline). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the authorization, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder shall be responsible for the cost of evaluation and any

decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

6. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes.

7. The holder shall be responsible for weed control on disturbed areas within the limits of the site. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods, which include following EPA and BLM requirements and policy.

8. The holder shall be responsible for maintaining the site in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

BURIED PIPELINES (RIGHT-OF-WAY) (PERMIT)

9. The holder shall conduct all activities associated with the construction, operation, and termination of the pipeline within the authorized limits.

10. The pipeline shall be buried with a minimum cover of _____ inches between the top of the pipe and ground level.

11. Blading of all vegetation **shall/shall not** be allowed. Blading is defined as the complete removal of brush and ground vegetation. Clearing of brush species shall be allowed. Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, *etc.*) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface. In areas where blading and/or clearing is allowed, the maximum width of these operations shall not exceed _____ feet.

12. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

13. Vegetation, soil, and rocks left as a result of construction or maintenance activity shall be randomly scattered over the project area and shall not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer, except that an earthen berm shall be left over the ditch line to allow for settling back to grade.

14. The holder shall seed all surface disturbed by construction activities. Seeding shall be done according to the attached seeding requirements (Exhibit __), using the attached seed mixture (as determined to meet Desired Plant Community objectives).

15. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

16. The holder shall post signs designating the BLM serial number assigned to this authorization at the following locations: the points of origin and completion, or entry to and exit from public lands, of the pipeline and at all major road crossings. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

17. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

SURFACE INSTALLED PIPELINE

18. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. **2803/2883**. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from fire or soil movement (including landslides and slumps as well as wind and water caused movement of particles) caused or substantially aggravated by any of the following within the permit area:

A. Activities of the holder, including but not limited to, construction, operation, maintenance, and termination of the facility.

B. Activities of other parties including but not limited to:
   (1). Land clearing.
   (2). Earth-disturbing and earth-moving work.
   (3). Blasting.
   (4). Vandalism and sabotage.

C. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction of in which the damage of injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from the negligent acts of the United States.

19. The holder shall conduct all activities associated with the construction, operation, and termination of the pipeline within the authorized width of _____ feet.

20. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

21. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or duney areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

22. The pipeline shall be buried a minimum of _____ inches under all roads, including "two-tracks" and trails. Burial shall continue for 20 feet on each side of each crossing. The condition of the road, upon completion of the construction, shall be returned to at least its former state, with no bumps, dips, or soft spots remaining in the road surface.

23. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

24. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number_____.

25. The holder shall post signs designating the BLM serial number assigned to this pipeline at the following locations: the points of origin and completion, or entry to and exit from public lands, of the pipeline and at all major road crossings. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

26. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

PERMANENT RESOURCE ROADS

Road Width and Grade

27. The road will have a driving surface of __ feet (all roads shall have a minimum driving surface of __ feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be __ feet.

/__/ Those segments of road where grade is in excess of 10 percent for more than 300 feet shall be designed by a professional engineer.

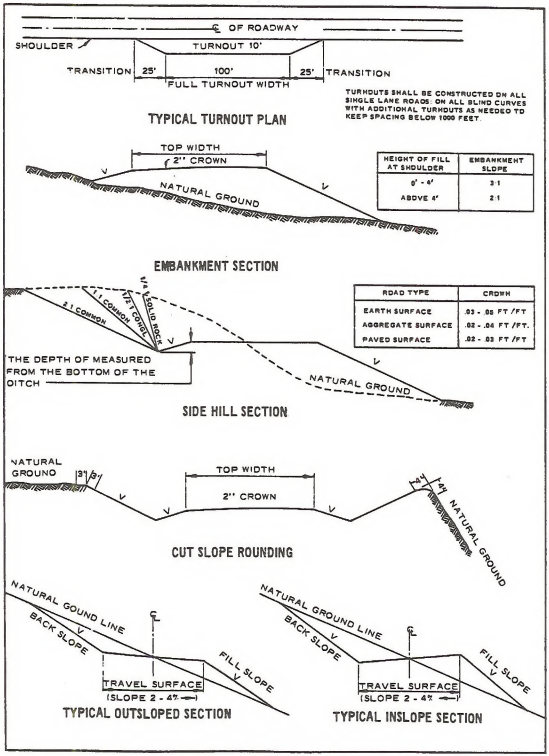
Crowning and Ditching

28. Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure A4-1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2 percent (i.e., 1" crown on a 14' wide road).

/__/ Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

/__/ Flat-blading is authorized on segment(s) delineated on the attached map.

FIGURE A4-1: CROSS-SECTIONS AND PLANS FOR TYPCIAL ROAD SECTIONS



Drainage

29. Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

SPACING INTERVAL FOR TURNOUT DITCHES

Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 10%	150' - 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

/__/ 400 foot intervals.

/__/ ____ foot intervals.

/__/ locations staked in the field as per spacing intervals above.

/__/ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

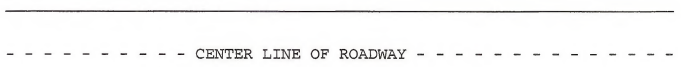
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

Example: 4% slope: spacing interval $= \frac{400}{4} + 100 = 200$ feet

Turnouts

30. Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

Surfacing

31. Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of ____ inches of _____. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

Cattleguards

32. Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

Maintenance

33. A. The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

B. Failure of the holder to share maintenance costs in dollars, equipment, materials, or manpower proportionate to the holders use with other authorized users may be adequate grounds to terminate the authorization. The determination as to whether this has occurred and the decision to terminate shall rest with the Authorized Officer. Upon request, the Authorized Officer shall be provided with copies of any maintenance agreement entered into.

Public Access

34. Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

Road Rehabilitation Specifications

35. When the road is abandoned, it will be ripped at least sixteen inches deep, including turnouts. The caliche may be reclaimed for re-use before ripping, if so desired. Alternately, the caliche can be plowed under with a grader, or other soil turning device, and the plowed surface disked before seeding. All culverts or other structures will be removed. All fill material will be replaced into the cut areas; barrow and lead-off ditches, drainage dips, or other erosion control earthwork will be filled or smoothed; and the abandoned road returned to the natural contours, as closely as possible. Water breaks at least eight inches high will be constructed as shown on accompanying Illustration Sheet. Traffic barriers will be installed at all vehicular access points to prevent further use of the road.

Reseed the entire area with the following mixture (to be determined by DPC): _____.

All disturbed areas are to be seeded with the seed mixture listed above. The seed and any fertilizer involved are to be applied together by broadcasting with a seed spreader, then harrowed for seed coverage. Use of a seed drill is acceptable. Appropriate measures will be taken to ensure that the seed/fertilizer mixture is evenly and uniformly planted. There will be no primary or secondary noxious weeds in the seed mixture. Seed will be tested for viability and purity in accordance with State law(s) within nine months prior to purchase. Commercial seed will be either certified or registered and the seed mixture container will be tagged in accordance with State law(s). The seed will be available for inspection by the Authorized Officer. The seeding will be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of the first growing season after seeding. Waiver of this requirement would be considered if diligent attempts to revegetate a site have failed and the Authorized Officer determines that further attempts would be futile.

Normally, the best time for seeding is between June 15 and September 15. However, the grantee may reseed immediately after completing surface abandonment procedures. The BLM reserves the right to require reseeding at a specific time if seed does not germinate after one complete growing season. Contact the appropriate resource area office at __(Phone No.)__ at least two working days before the start of reseeding activities or if there are any questions.

OVERHEAD ELECTRIC DISTRIBUTION LINES

36. The holder shall conduct all activities associated with the construction, operation, and termination of the powerline within the authorized limits.

37. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

38. Powerlines shall be constructed to standards outlined in "Suggested Practices for Raptor Protection on Powerlines," Raptor Research Foundation, Inc., 1981, unless otherwise agreed to by the Authorized Officer in writing.

The holder is responsible for demonstrating that power pole designs not meeting these standards are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. These modifications and/or additions shall be made by the holder without liability or expense to the United States.

39. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence will be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

40. Construction holes left open over night shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

41. The holder shall evenly spread the excess soil excavated from pole holes in the immediate vicinity of the pole structure.

42. The BLM serial number assigned to this authorization grant shall be posted in a permanent, conspicuous manner, and be maintained in a legible condition for the term of the authorization at all major road crossings and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

43. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures prescribed in the grant or determined at the time of abandonment.

44. All surface structures (poles, lines, transformers, *etc.*) shall be removed within _____ days of abandonment, relinquishment, or termination of use of the serviced facilities or within _____ days of abandonment, relinquishment, or termination of this authorization, whichever comes first. This will not apply where the powerline extends to serve an active, adjoining facility or facilities.

COMMUNICATION SITES

45. The authorization is conditioned upon the submission of a copy of an approved license and/or renewal license granted by the Federal Communications Commission (FCC) or the Interdepartmental Radio Advisory Committee (IRAC) for each electronic station installation authorized or future amendments of this authorization. A copy of the FCC or IRAC authorization shall be submitted within 90 days of issuance of this authorization or within 90 days following approval of an amendment to this authorization. Failure to submit the FCC or IRAC authorization copy within the time specified shall be grounds for termination of this authorization or cancellation of an amendment to this authorization. The Authorized Officer may grant an extension of up to 90 days, if requested in writing by the holder.

46. The holder and its sublessees shall at all times operate their radio-electronic equipment in such a manner as not to cause interference with radio-electronic operations of existing users in the vicinity. If such interference results from holder's or sublessee's operations, holder shall promptly, at its own

expense, modify the equipment and operations, or shut down if necessary to eliminate or reduce the interference to the satisfaction of the FCC, IRAC, and/or the Authorized Officer.

47. The holder shall notify the Authorized Officer of any intent to locate additional users within or upon their existing facilities, not less than 45 days prior to occupancy of holder's facilities. Information that must be included is:

a. Name, current address, and phone number of the third party user(s).

b. Expected date of occupancy.

c. A photo or sketch of the type of antennas to be installed, as well as any other planned physical changes to the exterior facilities operated by the holder. If the proposed use is not specified in the original authorization shall be required.

48. No less than 45 days prior to occupancy of the holder's facility, the holder shall notify existing users within a 1-mile radius that the holder intends to accommodate a new communication user in its facility. Existing users can then file any comments pertaining to potential frequency or electromagnetic problems with the Federal Communications Commission, 1919 M Street NW, Washington, DC 20554, with a copy to the Authorized Officer.

49. The holder shall be responsible for the actions and operations of any third party users associated with this facility. All such use shall be subject to the applicable terms, conditions, and stipulations of this authorization.

50. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

51. The holder shall post signs designating the BLM serial number assigned to this facility at the points of entry to and exit from the site. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

52. The holder agrees to share road maintenance costs with all present and future users of the access road. At such future time as a Users Association for this communication site is formed, the holder shall join the Users Association and remain a member in good standing. Within 30 days of the creation of such Users Association the holder shall provide the authorized officer with evidence of membership. Failure of the holder to join the Users Association and remain a member in good standing shall constitute sufficient grounds for termination of this authorization.

OIL AND GAS RELATED SITES (RIGHT-OF-WAY)

53. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

54. The holder shall post a sign designating the BLM serial number assigned to this authorization in a permanent, conspicuous location on the site where the sign will be visible from the entry to the site. This sign will be maintained in a legible condition for the term of the authorization.

SALTWATER DISPOSAL WELLS (COMMERCIAL)

55. This permit is subject to all terms, conditions, and stipulations of the NMOCD approval and applicable Roswell District General Requirements for Oil and Gas Operations on Federal Leases (copy attached).

56. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. **2803/2883**. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from fire or soil movement (including landslides and slumps, and movement by wind and water) caused or substantially aggravated by any of the following within the authorized site or facilities:

A. Activities of the holder, including but not limited to, construction, operation, maintenance, and termination of the facility.

B. Activities of other parties including but not limited to:

(1) Land clearing.
(2) Earth-disturbing and earth-moving work.
(3) Blasting.
(4) Vandalism and sabotage.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction of in which the damage of injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from the negligent acts of the United States.

57. As a guarantee of faithful performance of the provisions of this grant, the holder agrees to deliver and maintain a surety bond, or other performance security acceptable to the Authorized Officer, in the amount of _____, (minimum of $25,000) to cover the costs of plugging and reclamation. Should the sureties or bonds delivered under this grant become unsatisfactory to the Bureau, the holder shall, within thirty (30) days of demand, furnish a new bond, or other acceptable security, with surety.

The holder may deposit in a Federal depositor as directed by the Bureau, and maintain therein, cash in the amounts provided for above or negotiable securities of the United States having a market value at the time of deposit of not less than the dollar amounts provided for above.

58. The holder agrees to secure the prior approval of the Authorized Officer before commencing any operations such as: drilling out cement plugs, cementing operations, perforating (using explosive or hydraulic fracturing), deepening, altering or pulling a portion of the well's casing, plugging operations, or any other operation affecting the well.

59. The holder agrees to use the well solely for salt water disposal. No other substance—including oil, condensates, sludge, drilling fluids, other chemicals, or any toxic pollutant (as this term is defined under the Clean Water Act 40 CFR 104-149, Section 502)—shall be injected.

60. At any time deemed necessary by the Authorized Officer, earthen dikes shall be constructed and maintained around all tanks, vessels, and storage facilities. These dikes will be designed to contain, at

a minimum, the entire contents of the largest tank within the facility, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

61. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number_____.

62. The holder shall post a sign in a permanent, conspicuous location at the site. At a minimum, the sign will state the holder's name, the well name, the BLM serial number, and the legal location by township, range, and quarter-quarter of section. The sign will be maintained in a legible condition for the term of the authorization.

63. Upon cancellation, relinquishment, or expiration of this authorization, the holder shall comply with those abandonment procedures, including restoration and decontamination (if necessary) of the surface and plugging of the wellbore, prescribed in the authorization or determined at the time of abandonment.

BURIED TELEPHONE CABLES

64. The holder shall conduct all activities associated with the construction, operation, and termination of the telephone line within the authorized limits.

65. There shall be no clearing or blading of the telephone route unless otherwise agreed to in writing by the Authorized Officer.

66. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

67. Vegetation, soil, and rocks left as a result of construction, drilling, or maintenance activity shall be randomly scattered over the project area and shall not be left in rows, piles, or berms (except for a berm left over the ditch line to allow for settling back to grade), unless otherwise approved by the Authorized Officer.

68. The holder shall post signs designating the BLM serial number assigned to this authorization at the following locations: the points of origin and completion, or entry to and exit from public lands, of the telephone line and at all major road crossings. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

69. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number_____.

70. The holder shall not use the telephone cable route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the telephone cable route is not used as a roadway.

CATHODIC PROTECTION SITES

71. Unless otherwise approved, in writing, by the Authorized Officer, the holder shall reseed all surface disturbed by construction activities. If reseeding is required, it will be done according the attached seeding requirements (Exhibit), using seed mixture as determined by DPC.

72. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____ Munsell Soil Color Chart Number_____.

73. The holder shall post a sign designating the BLM serial number assigned to this authorization and the holder's name at the site. This sign will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the term of the authorization.

APPLICATION FOR PERMIT TO DRILL

74. The operator shall post signs identifying the location permitted herein in accordance with the requirements contained in Onshore Oil and Gas Order #1 and 43 CFR 3162.6.

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN:

(example) OPERATORS NAME: XYZ Oil & Gas Company
WELL NAME & NO: #1 XYZ Federal
LEASE NO.: NM-XXXXX
LOCATION: XX' FXL & XX' FXL - Sec. XX, T. XX S., R. XX E.,NMPM

On Lease - Surface Requirements Prior to Drilling:

75. The approval of this action does not in any way grant or imply approval of any off-lease or off-unit action. It is the responsibility of the applicant to obtain any such approvals from the appropriate surface managing agency, including the B.L.M., and/or any private landowners.

76. The BLM will monitor construction on this drill site. Notify the appropriate Resource Area Office, BLM at least (specify) working days prior to commencing construction at (505)_____.

77. Prior to commencing construction of the road, pad, or other associated developments, the operator shall provide the dirt contractor with a copy of the approved Surface Use Plan and the attached Conditions of Approval.

78. All vehicles and equipment associated with drilling, completion, or production phases of this well shall be confined to the approved road, pad, and other areas herein approved.

79. All topsoil and vegetation encountered during the construction of the drill site areas shall be stockpiled and made available for resurfacing of the disturbed areas after completion of the drilling operations. Topsoil on the (well name and number) is approximately (specify) inches in depth. A minimum of approximately (specify) cubic yards of topsoil material shall be stockpiled on the (specify) edge / at the (specify) corner of the location for reclamation of the pad and pit area.

80. The drill pad and access road for this well must be surfaced with (specify) inches of compacted caliche, gravel, or other approved surfacing material.

81. Caliche, gravel, or other related materials from new or existing pits on Federal mineral estate shall not be taken without prior approval from the Authorized Officer.

82. Payment for Federal mineral materials to be used for construction is required prior to construction of the pad and access road.

Drilling Pits:

83. A. Reserve pits shall be constructed such that at least one half the total pit volume is below natural ground level (minimum of 4 feet) unless approved by the Authorized Officer or a metal closed pit system is used. All mud pits shall be constructed so as not to leak, break, or allow discharge of liquids. Pits are not to be located in any natural drainage. Any plastic material used to line pits, must be at least __ mil in thickness, have a bursting strength of ___ PSI, and be removed to below ground level before the pits are covered.

B. Reserve pits shall be fenced on three sides during drilling operations. The fourth side shall be fenced immediately upon rig release. Any pit or open top tank containing oil and/or toxic liquids shall be equipped to deter entry by birds, bats, and other wildlife, and livestock.

C. Liquids in pits will be allowed to evaporate, or be properly disposed of otherwise, before pits are reclaimed. Under no circumstances shall pits be cut to be drained.

Containment Dikes:

84. Firewalls/containment dikes are to be constructed and maintained around all storage facilities/batteries. The containment structure must have sufficient volume to contain, at a minimum, the entire contents of the largest tank within the facility/battery, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Cave Protection Requirements:

85. A. If, during any construction activities any sinkholes or cave openings are discovered, all construction activities shall immediately cease, and the BLM office will be notified.

85. B. The BLM will, within 24 hours of notification in "A" above, conduct an on-the-ground field inspection for karst. At the field inspection, the authorized field inspector will authorize or suggest mitigating measures to lessen the damage to the karst environment. A verbal order to proceed or stop the operation will be issued at that time.

Painting:

86. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

Fences:

87. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

Well Completion Requirements:

88. If the well is completed, the reserve pit(s) shall be backfilled when dry, and cut-and-fill slopes shall be reduced to a slope of 3:1 or less. All areas of the pad not necessary for operations must be re-contoured to resemble the original contours of the surrounding terrain, and stockpiled topsoil must be re-distributed and the reclaimed area re-seeded. Seeding shall be done according to the attached seeding requirements (Exhibit B), using the attached seed mixture (as determined by Desired Plant Community).

89. All open-vent exhaust stacks associated with heater-treater, separator and dehydrator units shall be modified to prevent birds and bats from entering them and to the extent practical to discourage perching and nesting.

New production equipment installed on federal leases after November 1, 1993, will have the open-vent exhaust stacks constructed to prevent the entry of birds and bats and, to the extent practical, to discourage perching and nesting.

Abandonment:

90. If the well is dry and is to be plugged, approval of the proposed plugging program may be obtained verbally. However, verbal approval must be confirmed in writing by immediately filing an original and the required number of copies of the Notice of Intent to Abandon (Form 3160-5) with the appropriate BLM area office. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where plugs are to be placed, type of plug, type of plugging mud, etc.

91. Following receipt of "Subsequent Report of Abandonment", final BLM requirements for surface reclamation will be as specified in the authorization or determined at the time of abandonment.

92. If the well is not drilled, notify the BLM so that an official release can be approved.

MINERAL MATERIAL SITES

93. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

94. The holder shall conduct all activities associated with the construction, operation, and termination of the material pit within the authorized limits.

95. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass

through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

96. The holder shall be responsible for the actions and operations of any third party users associated with this authorization. All such use shall be subject to the applicable terms, conditions, and stipulations of this authorization.

97. The road proposed as part of this authorization shall be constructed and maintained in accordance with BLM road standards, including the New Mexico Roads Policy.

98. The holder shall seed all surface disturbed by construction activities. Seeding shall be done according to the attached seeding requirements (Exhibit ____), using the attached seed mixture (as determined by DPC).

99. Suitable topsoil material removed in conjunction with clearing and stripping shall be conserved in stockpiles (within the material site) (at the following staked locations: specify location). Topsoil shall be stripped to an average depth of (specify) inches. A total of (specify) cubic yards of topsoil shall be stockpiled.

100. Excess excavated, unsuitable, or slide material shall be disposed of as directed by the Authorized Officer.

101. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of (designate) inches deep, the soil shall be deemed too wet to adequately support construction equipment.

102. Existing roads and trails on public lands that are blocked as the result of the material pit activities shall be rerouted or rebuilt as directed by the authorized officer.

103. The holder shall recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to reestablish the approximate original contour of the land as determined by the authorized officer.

104. The holder shall uniformly spread topsoil over all unoccupied disturbed areas. Spreading shall not be done when the ground or topsoil is frozen or wet.

105. The BLM will monitor construction on this material pit site. Notify the appropriate Resource Area Office, BLM at least (specify) working days prior to commencing excavation at (505) _____ .

HYDROSTATIC TEST WATER DISCHARGE SITES

106. Before being authorized to discharge any hydrostatic test water, the Holder must submit to the BLM's Authorized Officer a hydrostatic test water discharge plan approved by the New Mexico Oil Conservation Division. Discharge of hydrostatic test water must comply with Environmental Protection Agency regulations described in 40 CFR 260, including testing the waste for hazardous waste characteristics before disposal. Generators of hydrostatic test water also must meet the discharge plan requirements of the New Mexico Water Quality Act and the New Mexico Water Quality Control Commission regulations 3-106b.

107. Prior to discharging hydrostatic test water from the pipeline, the Holder shall design and install a suitable energy dissipator at the outlet(s), and design and install appropriate erosion protection structures

needed to ensure that there will be no erosion or scouring of the natural surface or channels within the affected area as a result of the discharge. The Holder will be held accountable for any erosion, scouring, or depletion of vegetation resulting from the discharge. Any structures or objects, including sandbags, rocks, hay bales, or other material installed for erosion control, will be removed from the site upon completion of the hydrostatic testing.

108. The Holder shall inform the Authorized Officer three working days prior to the completion of the hydrostatic test and water discharge.

FLOODPLAIN DEVELOPMENT

109. If a threat of flooding by the Pecos River occurs during drilling operations, the _____ Resource Area Manager will issue a shut-in order. Toxic substances and, possibly, drilling equipment will be removed from the floodplain.

110. A drilling pad will be elevated at least _____ (inches, feet) and surfaced according to Condition of Approval 80.

111. All riparian habitat will be protected according to instructions provided by the Authorized Officer. Trees will not be cut down unless authorized.

112. Self-contained metal tanks are required for floodplain locations.

113. Pits containing oil, tank bottoms or other hydrocarbons, salt water, or any toxic substances will not be allowed in the floodplain.

114. Provisions for containing salt water flow must be made prior to beginning drilling, without resorting to reserve pits constructed in the ground. Metal tanks or tank trucks must be in place to collect salt water. Salt water storage will not be allowed in the floodplain.

115. Production facilities will be located outside the floodplain.

116. Flowlines from the wellhead to production facilities will be buried, if soil conditions permit burial.

117. Special precautions will be taken to reduce damage from flooding:
   a. The well will be equipped with a down-hole shut-in device, rated at working pressure of 1,500 psi; or
   b. The wellhead will be buried below ground in a concrete cellar with a grate over it; or,
   c. Three steel posts will be set in concrete. Horizontal steel cross bars will connect the posts. Heavy gauge chain link fencing will be welded or bolted to the post and cross bars. The V must point upstream or in the direction specified.

118. Chemical toilets will be used instead of latrines.

DRILLING RIG STORAGE

119. The holder shall conduct all activities associated with the operation, and termination of the rig storage within the authorized limits. All activity will be limited to (describe authorized area of activity) and the immediate perimeter (describe distance--maximum of 20 feet) .

120. If the storage of this rig should interfere with the producer's operations, the holder shall be required to remove it immediately.

121. Should the well be plugged and abandoned during the term of this permit, the permittee will be required either to remove the drilling rig within 30 days or assume all responsibility for restoration of the well pad and access road.

122. The BLM will be notified in writing within 30 days after removal of the drilling rig. Address correspondence to:

Bureau of Land Management
Roswell Resource Area
2909 West Second Street
Roswell, NM 88201
Attention: Realty Section

or

Bureau of Land Management
Carlsbad Resource Area
620 E. Greene
Carlsbad, NM 88220-6269
Attention: Realty Section

GEOPHYSICAL EXPLORATION

The following special conditions are attached, when needed, to the "Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration." Figure A4-2 is a copy of the Notice of Intent, located at the end of this Appendix.

123. There shall be no 3-D geophysical activities in Lesser Prairie Chicken habitat between March 15 and June 15. Other geophysical operations may be conducted during this period if they do not commence until after 9:00 a.m. and are not conducted between the hours of 3:00 a.m. and 9:00 a.m. Any deviation from this requirement must be approved by the Authorized Officer.

124. All gas or diesel combustion engines must have mufflers installed to effectively reduce the impact of excessive noise levels within Lesser Prairie chicken habitat.

125. Sand dune lizard study sites (See Exhibit ___, map) identified in the project area shall be avoided by vehicles involved in geophysical operations. A flagged buffer zone surrounding the study sites will identify the areas of concern. No ATVs shall be driven within the study sites. Geophones shall be hand carried onto the study sites. Drive-arounds shall be strictly adhered to within the study site areas.

126. Geophysical operations at sand dune lizard study sites will be monitored. One day prior to commencing geophysical operations within the immediate areas of sand dune lizard study sites, the geophysical company's representative shall call _____ at _____.

127. All large, hummocky sand dunes encountered during geophysical operations shall be avoided by driving around the sand dunes.

128. Any large trees (e.g., soapberry, elm, or large mesquite) encountered in the area of operations shall be avoided and shall not be disturbed.

129. Playas shall be avoided by using re-routes or skips.

130. Wildlife watering facilities shall be avoided by using re-routes or skips.

131. Archaeological sites shall be avoided by adhering to the re-routes flagged in the field, which are listed in the attachment to the NOI. Additional cultural resources protections provided in cultural report _____ , which are listed in the attachment, shall be followed.

132. Any fence needing to be cut during operations to allow access shall be immediately repaired to a condition as good as or better than the condition in which the fence was found. No fence shall be removed.

133. Where appropriate, disturbed areas shall be rehabilitated as directed by the Authorized Officer. Rehabilitation techniques may include, but are not limited to: ripping, disking, or other seed bed preparation; reseeding; placement of erosion control devices; and berming, barricading, and/or signing geophysical routes where they cross roads.

134. Operations shall be suspended when, in the judgement of the Authorized Officer, they have the possibility of unduly harming the surface during periods of wet weather or drought.

FILMING PERMITS

135. All vehicular traffic shall be confined to existing roads.

136. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

137. Upon cancellation, relinquishment, or expiration of this authorization, the holder shall comply with rehabilitation procedures prescribed by the Authorized Officer.

138. The holder shall notify the Authorized Officer upon completion of operations so that a compliance check can be conducted.

139. Acknowledgment, through the film credits, shall be given to: the U.S. Department of the Interior, Bureau of Land Management, Roswell Resource Area.

140. The permittee shall provide the BLM with proof of an insurance policy, naming the Bureau of Land Management as "additionally insured" or "co-insured".

141. The permittee shall provide the appropriate resource area office with a copy of the finished film product within two weeks of public distribution.

FIGURE A4-2

Form 3150-4a
(July 1993)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

TERMS AND CONDITIONS FOR NOTICE OF INTENT TO CONDUCT GEOPHYSICAL EXPLORATION

FORM APPROVED
OMB NO. 1004-0162
Expires: April 30, 1996

BLM Case No.

State Case No.

Company Name		Date NOI Filed	
Address		Company Project Name	
City	State	Client	
Zip Code	Phone No. *(Include area code)*		Crew Number

GENERAL

1. A copy of the approved Notice of Intent to Conduct Oil and Gas Geophysical Exploration Operations and Terms and Conditions shall be kept in the field with each seismic crew.

2. The BLM shall be notified at least 3 days and no more than 14 days before entering onto public lands. If conditions have changed, additional terms and conditions may be necessary.

3. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are discovered, the operator is to immediately stop work that might further disturb such materials, and contact the Authorized Officer (AO). Within five working days the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
- A timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume operations.

4. Due care must be taken to safeguard all livestock, wildlife, and wild horses in the vicinity of the exploration operations. Measures to mitigate adverse effects on protected or threatened/endangered species will be determined by the AO after consultation with the operator.

5. Operations shall be suspended when in the judgment of the Authorized Officer they have the possibility of unduly harming the surface during periods of wet weather.

6. Range improvements (fences, reservoirs, etc.) or land treatment projects (contour furrowing, seeding, or range monitoring sites) shall not be disturbed or altered without prior written approval of the Authorized Officer.

7. Federally owned or controlled water shall not be used without written permission of the Authorized Officer.

8. All fires set or caused as a result of these exploration operations shall be extinguished without expense to the government. All fires shall be reported to the BLM as soon as possible.

9. The operator shall notify the Authorized Officer in writing of any changes in the original application and secure written approval for the changes before proceeding.

10. When it is determined that activities will come closer than one quarter (1/4) mile of developed recreation sites, historic trails, springs or flowing water wells the Authorized Officer will be consulted to determine if the action is permissible.

11. Advanced written permission shall be obtained before conducting surface disturbing activities. This includes, but is not limited to: towing with a tractor, blading, dozing, snow removal, and vegetation removal.

12. Powder magazines and explosives shall be stored and handled according to U.S. Bureau of Alcohol, Tobacco and Firearms (ATF) standards. As required by ATF, loaded shotholes shall not be left unsecured.

(Continued on reverse)

FIGURE A4-2 (continued)

RECLAMATION/CLEANUP

1. Reclamation of disturbed areas shall be done concurrently with the geophysical operation, in-so-far as possible.

2. Shallow hole plugging shall be completed using the guidelines developed by the appropriate State/local regulatory agency or agencies and the Bureau of Land Management State Office. The requirements vary from State to State; therefore, those specific to the State the project is being conducted in will be followed.

3. Where appropriate, disturbed areas shall be reseeded, as directed by the Authorized Officer, until vegetative cover is established that is commensurate with pre-survey conditions. In areas where reseeding is not appropriate, the authorized officer shall determine what steps should be taken.

4. All trash, flagging, lath, etc. shall be removed and hauled to an authorized disposal site.

5. No oil or lubricants shall be drained onto the ground surface.

6. The operator shall notify the Authorized Officer of the date operations are completed.

COMPLETION OF PROCEDURES

1. A Notice of Completion (NOC) (Form 3150-5) shall be filed within 30 days of completion of operations including reclamation. A map (minimum scale of 1:24,000) must be attached to the NOC showing public lands crossed and the final location of source points.

I understand and agree to comply with these terms and conditions and any attached special conditions.

(Signature of Appropriate Representative) *(Date)*

☐ Special Conditions Attached

☆U.S. GOVERNMENT PRINTING OFFICE 1993—839-346

APPENDIX 5
PRACTICES FOR OIL AND GAS DRILLING AND OPERATIONS IN CAVE AND KARST AREAS

This appendix describes practices for detecting and avoiding significant caves and significant karst features with respect to oil and gas drilling, and for mitigating impacts to significant caves and karst when they cannot be avoided. These mitigations are predicated on the BLM's responsibilities for resource management and protection derived from the Federal Land Policy and Management Act, the Federal Cave Resources Protection Act, and the National Environmental Policy Act. The practices described here supersede those of the Draft "Interim Guide for Oil and Gas Drilling and Operations in Cave and Karst Areas" (February 1993).

POTENTIAL FOR CAVES OR KARST

A map of cave or karst potential would be maintained to provide the public with current information about the likelihood of the presence of cave or karst resources. The map would serve as an indicator of the potential for encountering caves or karst for which special practices could be required, following NEPA analysis, to mitigate drilling impacts. The primary use of the map is as a source of information for individuals or companies contemplating the leasing of federal minerals.

Three zones of cave or karst occurrence have been identified and categorized: high potential; medium potential; and low potential (See Maps 26 and 38, in Chapter 3 of the Draft RMP/RMPA/EIS). Areas that contain known cave or karst features are in the high potential zone. Areas containing known soluble rock formations with the potential for cave or karst development are in the medium potential zone. These zones were identified using geologic maps and existing information on caves and karst. All other lands fall into the low potential zone. These zones may be increased or decreased in size as new information from drilling, cave exploration or other sources becomes available.

The cave or karst occurrence zones have been further divided into smaller geographic areas to provide an additional means of identification of a specific area (Tables 89 and 98, and Maps 26 and 38, in Chapter 3 of the Draft RMP/RMPA/EIS). An estimate has been made for each of these areas as to the lowest likely depth at which caves might be expected. Again, this is simply a source of information for individuals or companies contemplating the leasing of federal minerals.

The lease notice "Potential Cave or Karst Occurrence Area" (Roswell 46), would be applied to leases when all or part of the lease is located in a high or medium potential cave or karst occurrence area. Refer to Figure A5-1 for an example of the lease notice. The purpose of the lease notice, as with maps of cave or karst potential, is to provide information to the purchasers of federal oil and gas leases.

Because the identification of cave or karst potential zones is only informational, the mitigations described below would be applied, when and where appropriate, irrespective of any identified zone of cave or karst potential. However, the emphasis of management would be on caves presently designated significant or on those designated in the future as significant, and on significant karst features. (There presently are 85 significant caves in the Carlsbad Resource Area and 99 significant caves in the Roswell Resource Area.)

FIGURE A5-1

LEASE NOTICE

Potential Cave or Karst Occurrence Area

All or portions of the lease are located in a potential cave or karst occurrence area. Within this area, caves or karst features such as sinkholes, passages, and large rooms may be encountered from the surface to a depth of as much as 2,500 feet, within surface areas ranging from a few acres to hundreds of acres. Due to the sensitive nature of the cave or karst systems of this area, special protective measures may be developed during environmental analyses and be required as part of approvals for drilling or other operations on this lease. These measures could include: relocation of the proposed well; changes in drilling operations; special casing and cementing programs; modifications to surface facilities; or other reasonable measures to mitigate impacts to cave or karst values. These measures may be imposed in accordance with 43 CFR 3101.1-2; 43 CFR 3162.5-1; Onshore Oil and Gas Order No. 1; and Section 6 of the lease terms.

Roswell 46
February 1991

MITIGATION OF DRILLING IMPACTS

The need to relocate drilling locations to avoid caves or karst, and any special drilling or production practices employed to mitigate impacts to caves or karst, would be determined during the NEPA analysis of APDs or other applications. The practices described below would be applied where needed, and to the extent necessary, to ensure that the potential impacts of drilling oil or gas wells, or of constructing other facilities, in cave or karst areas would be minimized according to the following process:

(1) Detect potential cave or karst resources and determine their significance.

(2) Avoid cave or karst resources where possible.

(3) Mitigate impacts to caves or karst that cannot be avoided.

The results of any detection efforts would be addressed in the NEPA analysis and appropriate mitigations would be developed, if needed, as part of the analysis.

Depending on the results of detection, avoidance would be considered as a means of mitigating potential impacts. In most cases, avoidance would be accomplished by relocation of the proposed well location, which is often done in consultation with the operator at the time of a field examination. Moving a proposed location up to 200 meters is a commonly employed avoidance measure. The need to move a location more than 200 meters would be addressed in the NEPA analysis of an APD. If the construction of a pipeline, road, power line or

other facility is proposed, rerouting or relocation would be required to accomplish avoidance.

The management of oil and gas operations in cave or karst areas, including approvals for drilling oil or gas wells, would be guided by procedures described below, Surface Use and Occupancy Requirements (Appendix 3), and Conditions of Approval (Appendix 4). These practices would be modified as new and cost effective technologies for cave and karst protection become available.

Detection Methods

The primary detection method would be the review of BLM or other records on the presence of caves or karst features in the area of interest, in conjunction with a field exam by a BLM employee or cave inventory contractor to determine the presence of unrecorded cave or karst features. Depending on the results of initial detection efforts and a determination of potential significance by the BLM, cave exploration could be employed to gain additional information. As various geophysical techniques are proven useful for cave detection and become generally available for use, they may be considered on a case-by-case basis as a means of locating unrecorded cave or karst features.

Surface Mitigation

Whether or not a proposed activity has been relocated to reduce potential impacts on caves or karst, surface mitigations would be applied, when needed, to minimize the risk of impacts during construction, drilling or production. Appropriate surface mitigations would be developed during the NEPA analysis of a proposal and could include one or more of the following practices, most of which have long been employed to mitigate impacts.

Practices to minimize potential impacts from reserve pit spills or leakage:

- The use of a closed system or steel tanks;
- Reorientation of the rig and related pit location, while giving consideration to human safety;

Practices to minimize potential impacts from leaking tanks or pipelines:

- The construction of berms around storage tanks sufficient to contain spills, in accordance with Roswell District Conditions of Approval;
- The installation of leak detection systems for pipelines or tanks;
- The use of permanent liners in storage tank areas;
- The use of differential pressure shut-off valves;
- The use of corrosion-inhibiting coatings and cathodic protection.

Practices to minimize the potential impacts of vented or escaping gases settling in caves:

- The flaring or venting of gas to protect human safety and to better disperse the gases and eliminate possible gas ignitions;
- The use of stock tank vapor recovery systems.

Subsurface Mitigation

Applicable and reasonable subsurface mitigations would be applied where the presence of caves or karst is obvious or expected, based on the results of detection efforts, and in lost circulation zones. The options could include, but are not limited to, the following practices.

Drilling:

- Cable tool drilling techniques would be used when possible in areas where encounters of caves or karst are expected at depths not greater that 350 feet.

- Rotary drilling techniques in cave or karst areas would include the use of either fresh water mud, foam, or compressed air as a circulating medium in zones where caves or karst are expected. Below those zones, the operator may use whatever drilling fluid is appropriate.

Casing and Cementing:

- All casing would meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run according to American Petroleum Institute and BLM standards.

- A "cave protection" casing could be required in instances when a designated significant cave would be jeopardized. The cave-protection casing string would be set at least 100 feet below the deepest known cave-bearing zone as determined by drilling or other pertinent methods.

- Regardless of the type of drilling machinery used, if bit drops of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations would immediately stop and the BLM would be notified by the Operator. The BLM would assess the consequences of the situation and work with the Operator on corrective actions to resolve the problem. If corrective actions fail, the well would be plugged.

- The casing would be cemented in place using one or a combination of any of the following methods that are environmentally sound, as determined by the BLM and the Operator:

1. If a large vold or severe lost circulation zone is encountered, isolation from above and below rather than complete cement coverage of these zones could be employed. This would be accomplished by using stage cementing equipment, external casing packers, cement baskets, and one-inch remedial cementing techniques.

2. For a less severe lost circulation zone encountered while drilling, the operator would attempt to circulate cement to the surface using a single or multistage cementing job composed of a "lead" and "tail" slurry for each stage.

3. Foam cementing techniques may be used.

Any corrective actions proposed to resolve problems related to bit drops or lost circulation would require BLM concurrence before implementation. A decision on how to proceed would be reached within 24 hours of notification.

MONITORING DRILLING OPERATIONS

Where the presence of significant caves or significant karst features are obvious or expected based on the results of detection efforts, and in lost circulation zones, constant monitoring of drilling operations by the BLM could be required.

MONITORING PRODUCTION OPERATIONS

On wells within one-half mile of significant caves, annual pressure tests would be performed by the Operator on all casing annuli. If the test results indicated a casing failure, remedial actions approved by the BLM would be undertaken to correct the problem.

PLUGGING AND ABANDONMENT

The BLM standards for plugging and abandonment in Onshore Oil and Gas Order No. 2 would be applied to protect or isolate all useable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, caves, and any prospectively

valuable deposits of minerals. This includes any zones encountered during drilling that contain fluids with a potential to migrate.

RECORD KEEPING

The Operator would track the customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

The BLM may review data held by companies on wells drilled in cave or karst areas, to gain information about impacts to caves and karst. This information would be used to categorize lost-circulation zones on the basis of depth, relative volume, and severity, and to evaluate and compare the relative success or failure of different remedies attempted to combat lost-circulation problems while drilling and cementing casing in these zones. This information would also be used to update information about the occurrence of cave and karst features. Information concerning cave resources gathered during drilling would be submitted, as well, to be retained by the BLM in accordance with the Roswell District Cave Management Plan and the regulations implementing the Federal Cave Resources Protection Act.

APPENDIX 6
WITHDRAWN LANDS

This appendix describes existing withdrawals and classifications in the Roswell Resource Area, including size, status and purpose.

TABLE A6-1
EXISTING WITHDRAWALS AND CLASSIFICATIONS

Authority	Locations	Acres	Purpose	Surface Mgmt. Agency	Segregative Effect
SO 5/1/1929 NM 52408	T. 4 N., R. 18 E.; T. 3 N., R. 23 E.	80.00	Air Navigation Site No. 29	Private	Public Land Laws
PLO 2637 3/21/1962 NM 088292	T. 11 S., R. 22 E.; T. 12 S., R. 22 E.	2,589.74	Two Rivers Reservoir Project Area	COE	Public Land Laws generally, including Mining Laws
PLO 6182 NM 23614	T. 12 N., R. 30 E.	52.70	NM Army National Guard Training Site	COE	Settlement, Sale, Location, Entry, including Mining Laws
PLO 2447 NM 061544	T. 10 S., R. 25, 26 E.	325.00	Nike Hercules Defense Site	DOD	Public Land Laws including Mining Laws
PLO 2794 NM 0268899	T. 1 S., R. 35 E.; T. 1 S., R. 36 E.	711.21	Blackwater Draw	Private	Prospecting, Location, Entry, Purchase under the Mining Law
EO 4/1/1899 NM 52330		27,620.00	Fort Stanton	BLM	Public Land Laws
NM 25765	T. 1, 2 N.,R. 30 E.; T. 1 S., R. 30 E.	6,713.90	Melrose Bombing Range	COE	All forms of appropriation, incl. general Mining Laws and Mineral Leasing Laws
EO 4/6/1917 NM 52344	T. 7 S., R. 11 E.	6.00	Power Site Reserve No. 596	Private	Settlement, Sale, Location, Entry
PLO 3526 NM 0554897	T. 10 N., R. 31 E.	480.00	Tucumcari Reclamation Project, Regulator Reservoir No. 2	BOR	Closed to surface entry (mineral estate reserved to State)
PLO 3632 NM 0555214	T. 5 N., R. 24 E.	160.00	Sumner Dam and Lake portion of Carlsbad Project	BOR	Closed to Surface Entry and Mining, but not Mineral Leasing
PLO 3632 NM 52396	T. 4 N., R. 24 E.	122.97	Fort Sumner Reservoir	BOR	Closed to Surface Entry and Mining, but not Mineral Leasing
PLO 3632 NM 52390	T. 5, 6 N., R. 23, 24 E.	7,839.625	Fort Sumner Dam	BOR	Closed to Surface Entry and Mining, but not Mineral Leasing
PLO 4798	T. 10 N., R. 31 E.	160.00	Tucumcari Reclamation Project	BOR	Closed to Surface Entry (minerals not owned by U.S.)

TABLE A6-1
EXISTING WITHDRAWALS AND CLASSIFICATIONS

Authority	Locations	Acres	Purpose	Surface Mgmt. Agency	Segregative Effect
SO 8/11/1944 NM 52398	T. 12 N., R. 29 E.	6.50	Tucumcari Project, Conchas Canal	BOR	Closed to Surface Entry and Mining, but not Mineral Leasing
NM 77962	T. 4, 5 N., R. 23, 24 E.	3,125.93	Sumner Dam and Reservoir	BOR	Settlement, Sale, Location, Entry, incl. Mining Law, but not Mineral Leasing
EO 5/25/1921 NM 42942	T. 9 S., R. 13 E.	15.21	Public Water Reserve No. 77	BLM	Settlement, Sale, Non-metalliferous Mineral Entry
EO 5/25/1921 NM 42952	T. 14 S., R. 22 E.	120.00	Public Water Reserve No. 228	BLM	Settlement, Sale, Non-metalliferous Mineral Entry
EO 5/25/1921 NM 42954	T. 6,10 S.,R. 9 E.; T. 8, 5 S., R. 8, 25 E.	200.00	Public Water Reserve No. 107	BLM	Settlement, Sale, Non-metalliferous Mineral Entry
EO 5/25/1921 NM 42958	T. 7, 8, 10 S., R. 17 E.	333.30	Public Water Reserve No. 107	BLM	Settlement, Sale, Non-metalliferous Mineral Entry
C&MU 929		66.17	Mescalero Sands Recreation Complex	BLM	Public Land Laws incl. general Mining Laws and Mineral Leasing Laws
Classification 2639		40.00	Torgac Cave	BLM	Public Land Laws incl. general Mining Laws and Mineral Leasing Laws

Abbreviations:

SO	Secretarial Order	COE	Corps of Engineers
PLO	Public Land Order	DOD	Department of Defense
NM	New Mexico	BOR	Bureau of Reclamation
EO	Executive Order	C&MU	Classification and Multiple Use (Act)

Source: BLM New Mexico State Office, 1994.

APPENDIX 7
RULES OF CONDUCT

This appendix describes rules of conduct for recreation use on public land in the Roswell Resource Area.

The Secretary of the Interior's regulations at 43 CFR 8365 provide, in part, rules of conduct for the protection of public lands and resources, and for the protection, comfort and well being of the public in its use of recreation areas, sites and facilities on public lands.

Additionally, the BLM's New Mexico State Director has established supplemental rules of conduct for visitor use under 43 CFR 8365.1. These rules are necessary for the protection of persons, property, and public lands and resources currently under the BLM's administration in the Roswell District, New Mexico. The rules of conduct also will apply to acquired lands that come under the administration of the BLM, as provided for in 43 CFR 8365.1-6. These rules of conduct apply to all persons using public lands. Violations of these rules are punishable by a fine not to exceed $1,000 or imprisonment not to exceed 12 months, or both.

Exceptions to the following rules of conduct may be permitted by the Authorized Officer subject to limits and restrictions of controlling federal or state laws. Persons granted use exemptions must possess written authorization from the BLM office having jurisdiction over the area.

Further, users must comply with the zoning, permitting, rules, or regulatory requirements of other agencies, where applicable. Except as otherwise provided by federal law or regulation, state and local laws and ordinances shall apply and be enforced by the appropriate state and local authorities (43 CFR 8365.1-7).

The following is a list of supplementary rules of conduct (prohibited acts) on Bureau of Land Management (BLM) designated recreation sites, special recreation management areas and other public lands in the BLM Roswell District, New Mexico. General rules of conduct are published in Titles 36 and 43 of the Code of Federal Regulations (CFR). Supplementary Rules of Conduct for the Roswell District (the Roswell and Carlsbad Resource Areas) were published in the *Federal Register*, Volume 60, No. 235 on Thursday, December 7, 1995. When approved, subsequent rules developed for Bureau of Land Management administered lands in New Mexico or applicable changes in the Code of Federal Regulations would supersede these rules without requiring an amendment of the RMP. The following acts are prohibited unless authorized by written permit from the BLM Roswell District Office, the Roswell Resource Area or the Carlsbad Resource Area.

CAMPING

- Camping in one location is limited to 14 consecutive days. After that time, campers must move at least 25 miles from that location and not return for 28 consecutive days (43 CFR 8365.1-2(a)).
- Failing to pay any fees imposed in accordance with 36 CFR part 71.
- Camping or parking for more than 30 minutes within 300 feet of any spring, manmade water hole, water well or watering tank used by wildlife or domestic stock (43 CFR 8365.1-6).
- Leaving personal property unattended for more than 24 hours in a day use area, or 72 hours in other areas. Personal property left unattended beyond such time limit is subject to disposition under the Federal Property and Administrative services Act (43 CFR 8365.2-3(c)).
- Reserving camping space, except at group facilities. Camping space is available on a first-come-first-serve basis (43 CFR 8365.1-6).
- Failing to maintain quiet in a developed recreation site between the hours of 10:00 p.m. to 6:00 a.m., or other hours posted. During this period no person shall create noise which

disturbs other visitors (43 CFR 8365.1-4(a)).
• No more than two motorized vehicles or 10 individuals, or both shall occupy any single, approved developed recreation site not designated for group use or as a parking area. Groups exceeding these limits must use a group site or additional designated sites (43 CFR 8365.1-6).
• Parking in or occupying a parking space posted or marked for handicapped use without displaying an official identification tag or plate (43 CFR 8365.1-6).
• Pitching any tent, parking any trailer, erecting any shelter or placing any other camping equipment in any area other than the place designated for it within a designated campsite (43 CFR 8365.2-3(b)).
• Entering or using a recreation site or a portion of a site closed to public use (43 CFR 8365.2-3(f)).
• Moving any table, stove, barrier, litter receptacle or other campground equipment (43 CFR 8365.2-3(f)).
• Bringing equine stock, llama, cattle, or other livestock within campgrounds or picnic areas unless facilities have been specifically provided for such use (43 CFR 8365.2-3(h)).
• Camping, occupying or building a fire on, or in, any historic or prehistoric structure or ruin site (43 CFR 8365.1-6).

SANITATION

• Constructing or maintaining any pit toilet facility (43 CFR 8365.1-6).
• Dumping or disposing sewage or sewage treatment chemicals from self-contained or containerized toilets, except at facilities provided for that purpose (43 CFR 8365.1-1(3)).
• Showering or bathing at any improved or developed water source, outdoor hydrant, pump, faucet, fountain, or restroom water faucet unless the water source is designated for that purpose (43 CFR 8365.2.1(b)).
• Cleaning fish, game, other food, clothing or household articles at any outdoor hydrant, pump, faucet, fountain, or restroom water faucet (43 CFR 8365.2-1(a)).
• Disposing of any waste or gray water except where disposal facilities are provided (43 CFR,8365.1-1(3)).
• Disposing of any cans, bottles or other nonflammable trash and garbage, except in designated receptacles (CFR 43 8365.1-1(1)).

FIRES

• Disposing of any burning or smoldering material, except at sites or facilities provided for that purpose (43 CFR 8365.1-6).
• Leaving a campfire unattended, or failing to completely extinguish a fire after use (43 CFR, 8365.1-6).
• Igniting or burning any material containing or producing toxic or hazardous material (43 CFR 8365.1-6).
• Failing to adhere to fire danger ratings issued by the government (43 CFR 8365.1-6).
• Building a fire in a developed recreation site except in a stove, grill, fireplace or ring provided for that purpose (43 CFR 8365. 1-6).

VEGETATION AND MINERAL REMOVAL

• Cutting, removing, or transporting woody materials without authorization, including, but not limited to:
1. Any type or variety of vegetation (excluding dead and down) (43 CFR 8365.1-6);
2. Fuelwood or firewood, either green or standing deadwood (43 CFR 8365.1-6); or,
3. Live plants (except for consumption, medicinal purposes, study or personal collection) (43 CFR 8365.1-6).

• Gathering or collecting woody plants or any other natural resources or minerals which require a permit, without having a permit (43 CFR 8365.1-6).
• Removing or transporting any mineral resources including, but not limited to, rock, sand, gravel, and minerals on or from public lands without written consent, proof of purchase, or a valid permit. Collecting specimens and samples in reasonable amounts for personal noncommercial use, under 43 CFR 8365.1-5(b) is not affected by this section (43 CFR 8365.1-6).
• Collecting or removing any natural resource, including wood for campfires, where restrictions on removal are posted (43 CFR 8365.1-6).

PETS

• Failing to prevent a pet from harassing, molesting, injuring, or killing humans, wildlife or livestock (43 CFR 8365.1-6).
• Failing to immediately remove and dispose of in a sanitary manner all pet fecal material, trash, garbage or waste created within a developed recreation site (43 CFR 8365.1-6)
• Failing to physically restrain a pet at all times within developed campsites and picnic areas. Pets are prohibited where posted on all designated nature or interpretive trails and from entering caves. Animals trained to assist handicapped persons are exempt from this rule (43 CFR 8365.1-6).
• Bringing an animal into a developed recreation site unless the animal is on a leash not longer than 6 feet and is secured to a fixed object or under control of a person, or is otherwise physically restricted at all times (43 CFR 8365.2.1(c)).

VEHICLES

• Operating an off-road vehicle without full-time use of an approved spark arrester and muffler (43 CFR 8365.1-6).
• Failing to display the required state off-road vehicle registration (43 CFR 8365.1-6).
• Lubricating or repairing any vehicle, except repairs necessitated by emergency (43 CFR 8365.1-6).
• Operating, parking, or leaving a motorized vehicle in violation of posted restrictions or in such a manner or location as to:

1. Create a safety hazard;
2. Interfere with other authorized users or uses;
3. Obstruct or impede normal or emergency traffic movement;
4. Interfere with or impede administrative activities;
5. Interfere with the parking of other vehicles; or
6. Endanger property or any person (43 CFR 8365.1-6).

• Operating vehicles off of existing or designated roads and trails within a developed recreation site, unless facilities have been specifically provided for such use. Motorized vehicles will be operated for access to and from developed facilities only (43 CFR 8365.1-6).
• Driving a motor vehicle within developed recreation sites or areas except on roads and places provided for this purpose, unless otherwise authorized (43 CFR 8365.2-4).
• Operating a motor vehicle in motion, unless the operator and each front seat passenger is restrained by a properly fastened safety belt (43 CFR 8365.1-3(b)(1)).

FIREWORKS

• Possessing or using fireworks (43 CFR 8365.2-5(a)).

ALCOHOLIC BEVERAGES

• Selling or giving an alcoholic beverage to a person under 21 years of age (43 CFR 8365.1-6).
• Possessing an alcoholic beverage by a person under 21 years of age (43 CFR 8365.1-6).

WEAPONS

• Carrying concealed weapons (43 CFR 8365.1-6).
• Discharging firearms or other weapons, or hunting and trapping within 150 yards of developed recreation sites and areas (43 CFR 8365.1-6).
• Using weapons in violation of state law within developed campsites or picnic areas (43 CFR 8365.1-6).

ARCHAEOLOGY OR CULTURAL RESOURCES

• Gathering or collecting historical artifacts that require permit for collection, without having a permit (43 CFR 8365.1-6).
• Willfully defacing, disturbing, removing or destroying any personal property or structures, or any scientific, cultural, archaeological or historic resource, natural object or area (43 CFR 8365.1-5(a)(1)).

CAVES

• Entering the following caves from November 1

to April 15 of each year: Fort Stanton, Torgac, Torgac Annex, Crockett, Crystal, Big-Eared Cave, Bat Hole, Malpais Madness, Tres Ninos and Feather. Only personnel engaged in authorized scientific bat studies, census, monitoring, and emergencies will be allowed to enter caves during this time, due to bat hibernation.

•Entering a cave without each person wearing a safety helmet (hard hat) with chin strap and having at least three sources of light (43 CFR 8365.1-6).

• Annoying or disturbing bats at any time (43 CFR 8365.1-6).

• Willfully defacing, removing or destroying cave resources (43 CFR 8365.1-5(a)(2)).

ADVERTISEMENTS OR COMMERCIAL USE

• Posting or distributing any signs, posters, printed material, or commercial advertisements (43 CFR 8365.1-6).

SPECIAL RECREATION MANAGEMENT AREAS AND ACECs

In addition to the regulations in 43 CFR 8365.2 and the supplemental rules of conduct listed above, the following supplemental rules will be applied to Special Recreation Management Areas, caves, and ACECs in the Roswell Resource Area.

CAMPING

1. The group shelter at Valley of Fires may be reserved in advance.
2. Day use fees are due upon entrance to a day-use area. Camping fees are due within 1/2 hour after selecting a campsite.
3. Camping checkout time is 10:00 a.m. Day-users must leave the area by 10:00 p.m. or be charged a camping fee.
4. Campers must display their fee stub as instructed on the envelope.

CAVE RESOURCES, GENERAL RULES

1. No removal is allowed of any cave resources such as archaeological and historical artifacts, natural materials or features, plant and animal life, or any item of public property.
2. Minors. At least one person in the caving party must be 18 years or older and will be responsible for the actions of younger members of the party.
3. Litter and Refuse. All materials (flagging tape, litter, etc.) taken into the cave(s) must be removed and properly disposed of at the end of each cave visit.
4. Human solid or liquid waste may not be deposited in any cave.
5. Smoking is not permitted in any cave.

In addition to the general rules of conduct for all caves, the following rules will be in effect for all caves within ACECs, caves where Special Recreation Management Area Plans (SRMA) have been developed, or the caves are intensively managed due to their scientific or recreational value, pursuant to Public Law 96-95, Public Law 100-691, 43 CFR 8364.1, 43 CFR 8360.0-7, and 30-15-6 NMSA 1978.

1. Permits.

   a. Entry to a cave for the purpose of recreation, education, or scientific studies requires a permit issued by the Roswell Resource Area.

   b. Authorization for entry to caves is validated only upon signature of the permittees, and is valid only for those individuals whose signatures appear on the permit.

   c. Permits must be returned to the Roswell Resource Area Office within five days following the completion of a cave trip. The permit form must be returned even if the trip is canceled.

   d. A cave trip authorization is issued for the time period and date specified on the front of the permit. It is revocable at any time upon notice, for any breach of conditions described in the permit, or at the discretion of the Authorized Officer of the Bureau of Land Management.

   e. Permittees may reserve only two dates per cave in advance.

f. Applications for cave entrance permits for caves that are closed from November 1 through April 15, will only be accepted from January 1 to November 1 of each year. Permit applications will be accepted at any time for caves in ACECs that are not bat hibernaculums.

g. Permittees must abide by all cave use stipulations attached to permit.

2. Group Size
a. Fort Stanton Cave - maximum group size is 10 persons between the entrance and Hellhole gate and 6 persons beyond Hellhole Gate, including a BLM guide. A total of 16 persons is allowed in cave at one time. Bat Cave visitation is prohibited except for research.

b. Torgac Cave - maximum group size is 6 persons, including a BLM guide.

c. Crockett Cave - maximum group size is 9 persons.

d. All other caves in ACECs - maximum group size is 10 persons.

e. Group size requirements can be waived with written permission from the BLM. The maximum group size per BLM guide is 10 people.

DEFINITIONS

Definitions of terms used in the rules of conduct:

• **Abandonment** The voluntary relinquishment of control of property for longer than a period specified with no intent to retain possession.

• **Administrative activities** Those activities conducted under the authority of the BLM for the purpose of safeguarding persons or property, implementing management plans and policies developed in accordance with and consistent with regulations, or repairing or maintaining facilities.

• **Authorized Officer** Any employee of the BLM who has been delegated the authority to perform under Title 43 of the Code of Federal Regulations.

• **Campfire** A controlled fire occurring outdoors for cooking, branding, personal warmth, lighting, ceremonial, or aesthetic purposes.

• **Camping** Erecting a tent or shelter of natural or synthetic material, preparing a sleeping bag or other bedding material for use, or the parking of a motor vehicle, motor home, or trailer for the apparent purpose of overnight occupancy. Occupying a developed camp site or an approved location within developed recreation areas or sites during the established night period of 10:00 p.m. to 6:00 a.m. will be considered overnight camping for fee collection and enforcement purposes.

• **Developed recreation site or area** Sites or areas that contain structures or capital improvements used primarily for recreation purposes by the public. Development may vary from limited development for protection of the resources and the safety of users to a distinctly defined site in which developed facilities that meet the Land and Water Conservation Fund Act of 1965 (as amended) criteria for a fee collection site are provided for concentrated public recreation use.

• **Historic or prehistoric structure or ruin site** Any location at least 50 years old which meets the standards for inclusion on the National Register of Historic Places as defined in 36 CFR 60.4, without regard to whether the site has been nominated or accepted.

• **Occupancy** Taking or holding possession of a camp site, other location, or residence on public land.

• **Pet** A dog, cat, or any other domesticated companion animal.

• **Public lands** Any lands, interest in lands, or related waters owned by the United States and administered by the BLM. Related waters are waters which lie directly over or adjacent to

public lands and which require management to protect federally administered resources or to provide for enhanced visitor safety and other recreation experiences.

• **SRMA** An area where special or more intensive types of resource and user management are needed.

• **Stove fire** A fire built inside an enclosed stove or grill, a portable brazier, or a pressurized liquid or gas stove, including space-heating devices.

• **Vehicle** Any motorized or mechanized device, including bicycles, hang gliders, ultra-lights, and hot air balloons, which is propelled or pulled by any living or other energy source, and capable of travel by any means over ground, water, or air.

• **Weapon** A firearm, compressed gas or spring-powered pistol or rifle, bow and arrow, crossbow, blowgun, spear gun, slingshot, irritant gas device, explosive device, or any other implement designed to discharge missiles or projectiles; hand-thrown spear, edged weapons, nun-chucks, clubs, billy-clubs, and any device modified for use or designed for use as a striking instrument; any weapon the possession of which is prohibited under New Mexico law.

Developed recreation sites or areas and Special Recreation Management Areas in the Roswell District:

1. Alkali Lake Off-road Vehicle Area (Carlsbad Resource Area)

2. Cave SRMA's - McKittrick Hill, Lost, Fence Canyon, Manhole, Yellow Jacket/Lair, Chosa Draw, Mudgetts, Honest Injun, KFF Caverns (all in Carlsbad Resource Area), and Fort Stanton Cave, Torgac Cave, and Crockett's Cave (all in Roswell Resource Area)

3. Chosa Draw SRMA (Carlsbad Resource Area)

4. Dark Canyon SRMA (Carlsbad Resource Area)

5. Fort Stanton SRMA (Roswell Resource Area)

6. Guadalupe Escarpment Scenic Area(Carlsbad Resource Area)

7. Hackberry Lake Off-road Vehicle Area (Carlsbad Resource Area)

8. Lonesome Ridge SRMA (Carlsbad Resource Area)

9. Mescalero Sands North Dune SRMA (Roswell Resource Area)

10. Overflow Wetlands (Roswell Resource Area)

11. Pecos River Canyon Complex (Carlsbad Resource Area)

12. Pecos River Corridor (Carlsbad Resource Area)

13. Valley of Fires Recreation Area (Roswell Resource Area)

APPENDIX 8
ACQUISITION, RETENTION, AND DISPOSAL CRITERIA

This appendix describes the criteria that would be applied to lands in the Roswell Resource Area that may be suitable for acquisition by the BLM, for disposal by the BLM, or for retention. The criteria are one part of the process in determining suitability.

ACQUISITION and RETENTION CRITERIA

Lands meeting the following criteria would be considered for retention or acquisition:

- Facilitates access to areas retained for long-term public use;
- Enhances Congressionally designated areas, rivers or trails;
- Facilitates national, state and local BLM priorities;
- Secures significant water-related lands for the public, including lake shore, river front, stream or pond sites;
- Has important riparian or wetland areas;
- Has significant caves where a portion of the cave is located on public lands;

Cultural sites meeting the following evaluation standards would be considered for retention or acquisition:

- Offers high research values;
- Possesses moderate scarcity in terms of similar sites;
- Possesses some unique value, such as association with an important historic person, or high aesthetic value;
- Contributes significantly to the interpretive potential of cultural resources already in public ownership.

Minerals would be considered for acquisition based on the following criteria:

- Offers consolidation of mineral estates;
- Requires acquisition in response to a federal project need:
  a. When development of a federal project precludes the mineral estate owner from exercising development rights.
  b. When the exercise of the mineral estate owner's right of development would materially interfere with the federal project.

Recreation lands meeting any of the following criteria would be considered for retention or acquisition:

- Presence of national values, such as Congressionally designated areas, rivers, or trails or sites;
- Presence of values that enhance recreation trails and waterways or the interstate, state, and multi-county use;
- Presence of local values or opportunities for extensive use, such as hunting, fishing, OHV, and caves;

Acquisition would be considered for inholdings within the boundaries of Congressionally designated wilderness areas under BLM administration. Lands adjacent to wilderness areas that enhance the management of the area could be considered for retention or acquisition.

Lands providing significant wildlife values would be considered for retention or acquisition based on any of the following criteria:

- Presence of threatened or endangered species;
  a. Federally listed species
  b. Federal candidate species
  c. State listed species of special concern
- Presence of fisheries;
- Presence of big game or upland game habitat such as: crucial winter areas; kidding, fawning, or calving areas;

security areas; and crucial breeding, nesting, resting, roosting, feeding, and wintering habitat areas;
- Presence of migratory bird or waterfowl crucial breeding, nesting, resting, roosting, feeding and wintering habitat areas;
- Presence of existing or potential nesting areas for sensitive species of raptors;
- Presence of nongame crucial habitat areas.

Acquisition or retention of riparian or wetland habitat would be considered based on any of the following criteria:

- Presence of a riparian plant community;
- Presence of surface water for most of the year;
- Presence of wetland soils indicative of wetland conditions;
- Potential to support threatened or endangered species;
- Potential for fisheries;
- Adjacent to public lands supporting riparian or wetland habitat.

Acquisition or retention of playa lakes would be considered based on the following criteria:

- Adjacent to public lands supporting playas, sinkholes, oralkali lakes;
- Presence of seasonal or yearlong surface water;
- Mineral estate owned by the federal government;
- Located within wildlife habitat areas (WHAs);
- Importance for waterfowl, big game or nongame species habitat;
- Potential for development as a yearlong source of water and as riparian habitat;
- Provides significant wildlife values.

The acquisition of public access (easements) would be considered in situations where:

- Public land access is interrupted by private- or state-owned inholdings on existing roads that originate from county or state roads;
- Public access is needed to resolve user conflicts;
- Access is needed to enhance management of public lands.

DISPOSAL CRITERIA

Parcels of BLM land would be identified for disposal through sale or exchange under the authority of Sections 203 and 206 of the Federal Land Policy and Management Act of 1976. The following criteria would be used to identify parcels for disposal:

1. A tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another federal department or agency.
2. A tract was acquired for a specific purpose and the tract is no longer required for that or any other federal purpose.
3. Disposal of a tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining a tract in federal ownership.

Each parcel identified for sale or exchange would be subject to certain conditions before disposal: conformance with disposal criteria; hazardous waste, wilderness, wildlife, and riparian/wetland evaluations; and cultural and mineral resource clearances and reports. The results of the evaluations and reports would be included in an environmental analysis. A notice of realty action would be subsequently published. Parcels would be retained if the clearances, reports, or environmental analysis show any resource values worth retaining.

APPENDIX 9
LANDS IDENTIFIED FOR ACQUISITION

This appendix lists the legal descriptions of non-BLM lands that may be suitable for consideration for acquisition to further BLM management goals and policies. This appendix reflects a number of changes made to Appendix 9 published in the Draft Roswell RMP/EIS, which resulted from BLM and public review and comment. This list is not intended to be inclusive.

TABLE A9-1

LANDS IDENTIFIED FOR ACQUISITION

Township/Range		Sec.		Acres
CHAVES COUNTY				
CAPROCK WHA				
Private				
T.11S.	R.30E.	33	E½NE¼	80.00
T.11S.	R.30E	33	NE¼SW¼	80.00
T.11S.	R.30E	33	W½SE¼	80.00
T.11S.	R.31E	29	NE¼	160.00
T.11S.	R.31E	29	SE¼	160.00
T.11S.	R.31E	29	SE¼SW¼	40.00
T.12S.	R.30E	04	N½	320.00
T.12S.	R.30E	13	W½	320.00
T.12S.	R.31E.	05	LOT 01	39.61
T.12S.	R.31E.	05	LOT 02	39.62
T.12S.	R.31E.	05	LOT 03	39.64
T.12S.	R.31E.	05	LOT 04	39.65
T.12S.	R.31E.	05	NW¼SE¼	40.00
T.12S.	R.31E.	05	SW¼	160.00
T.12S.	R.31E.	05	S½NE¼	80.00
T.12S.	R.31E.	05	S½N½	160.00
T.12S.	R.31E.	22	NW¼	160.00
T.12S.	R.31E.	22	N½SW¼	80.00
T.12S.	R.31E.	22	SE¼	160.00
T.12S.	R.31E.	22	SE¼SW¼	40.00
T.12S.	R.31E.	22	SW¼NE¼	40.00
T.12S.	R.31E.	27	N½	320.00
T.12S.	R.31E.	27	SE¼	160.00
T.12S.	R.31E.	34	E½SE¼	80.00
T.12S.	R.31E.	34	N½	320.00
T.12S.	R.31E.	34	SW¼	160.00
T.13S.	R.31E.	03	LOT 01	40.25
T.13S.	R.31E.	03	LOT 02	40.24
T.13S.	R.31E.	03	LOT 03	40.22
T.13S.	R.31E.	03	LOT 04	40.21
T.13S.	R.31E.	03	S½	320.00
T.13S.	R.31E.	03	S½N½	160.00
T.13S.	R.31E.	10	ALL	640.00
T.13S.	R.31E.	22	ALL	640.00
T.13S.	R.31E.	27	ALL	640.00
T.13S.	R.31E.	34	ALL	640.00
T.14S.	R.31E.	03	LOT 01	40.29
T.14S.	R.31E.	03	LOT 02	40.25
T.14S.	R.31E.	03	LOT 03	40.23
T.14S.	R.31E.	03	LOT 04	40.19
T.14S.	R.31E.	03	S½	320.00
T.14S.	R.31E.	03	S½N½	160.00
T.14S.	R.31E.	10	ALL	640.00
T.14S.	R.31E.	15	ALL	640.00
State				
T.08S.	R.30E.	36	ALL	640.00
T.08S.	R.31E.	32	ALL	640.00
T.09S.	R.30E.	02	LOT 01	39.87
T.09S.	R.30E.	02	LOT 02	39.93
T.09S.	R.30E.	02	LOT 03	39.99
T.09S.	R.30E.	02	LOT 04	40.05
T.09S.	R.30E.	02	SW¼	160.00
T.09S.	R.30E.	02	S½N½	160.00
T.09S.	R.30E.	36	ALL	640.00
T.09S.	R.31E.	32	ALL	640.00
T.10S.	R.29E.	36	ALL	640.00
T.10S.	R.30E.	02	LOT 01	39.74
T.10S.	R.30E.	02	LOT 02	39.75
T.10S.	R.30E.	02	LOT 03	39.77
T.10S.	R.30E.	02	LOT 04	39.79
T.10S.	R.30E.	02	S½	320.00
T.10S.	R.30E.	02	S½N½	160.00
T.10S.	R.30E.	32	ALL	640.00
T.10S.	R.31E.	30	E½NE¼	80.00
T.10S.	R.31E.	30	NE¼NW¼	40.00
T.10S.	R.31E.	30	NW¼NE¼	40.00
T.10S.	R.31E.	30	SE¼	160.00
T.11S.	R.30E.	02	LOT 01	22.63
T.11S.	R.30E.	02	LOT 02	22.56
T.11S.	R.30E.	02	LOT 03	22.50
T.11S.	R.30E.	02	LOT 04	22.43
T.11S.	R.30E.	02	S½	320.00
T.11S.	R.30E.	16	ALL	640.00
T.11S.	R.30E.	32	ALL	640.00
T.11S.	R.30E.	36	ALL	640.00
T.11S.	R.31E.	32	ALL	640.00
T.12S.	R.30E.	02	LOT 01	40.04
T.12S.	R.30E.	02	LOT 02	39.87
T.12S.	R.30E.	02	LOT 03	39.71
T.12S.	R.30E.	02	LOT 04	39.54
T.12S.	R.30E.	02	S½	320.00
T.12S.	R.30E.	02	S½N½	160.00
T.12S.	R.30E.	14	SE¼SE¼	40.00
T.12S.	R.30E.	15	NW¼NE¼	40.00
T.12S.	R.30E.	22	N½NE¼	80.00
T.12S.	R.30E.	23	E½SE¼	80.00
T.12S.	R.30E.	23	N½N½	160.00
T.12S.	R.30E.	23	SE¼NE¼	40.00
T.12S.	R.30E.	24	E½SE¼	80.00
T.12S.	R.30E.	24	N½N½	160.00
T.12S.	R.30E.	24	SE¼NE¼	40.00
T.12S.	R.30E.	25	E½E½	160.00
T.12S.	R.30E.	26	E½E½	160.00
T.12S.	R.30E.	26	SW¼SE¼	40.00
T.12S.	R.30E.	26	S½SW¼	80.00
T.12S.	R.30E.	27	S½SE¼	160.00
T.12S.	R.30E.	36	ALL	640.00
T.12S.	R.31E.	04	SW¼	160.00
T.12S.	R.31E.	05	NE¼SW¼	40.00
T.12S.	R.31E.	09	SE¼	160.00
T.12S.	R.31E.	16	ALL	640.00
T.12S.	R.31E.	19	E½SE¼	80.00
T.12S.	R.31E.	19	N½N½	160.00
T.12S.	R.31E.	19	SE¼NE¼	40.00
T.12S.	R.31E.	27	SW¼	160.00
T.12S.	R.31E.	30	LOT 04	36.56
T.12S.	R.31E.	30	E½E½	160.00
T.12S.	R.31E.	30	SE¼SE¼	40.00
T.12S.	R.31E.	30	SE¼SW¼	40.00
T.12S.	R.31E.	32	ALL	640.00
T.13S.	R.30E.	02	LOT 01	39.99
T.13S.	R.30E.	02	LOT 02	40.02
T.13S.	R.30E.	02	LOT 03	40.04
T.13S.	R.30E.	02	LOT 04	40.07
T.13S.	R.30E.	02	S½	320.00
T.13S.	R.30E.	02	S½N½	160.00
T.13S.	R.30E.	07	LOT 01	48.15
T.13S.	R.30E.	07	NW¼NW¼	40.00
T.13S.	R.30E.	16	ALL	640.00
T.13S.	R.30E.	36	ALL	640.00
T.13S.	R.31E.	15	ALL	640.00
T.13S.	R.31E.	16	ALL	640.00
T.13S.	R.31E.	32	ALL	640.00
T.14S.	R.30E.	07	S½	320.00
T.14S.	R.30E.	13	S½SE¼	80.00
T.14S.	R.30E.	18	LOT 03	37.79
T.14S.	R.30E.	18	LOT 04	37.73
T.14S.	R.30E.	18	E½	320.00
T.14S.	R.30E.	21	SE¼SE¼	40.00
T.14S.	R.31E.	08	NE¼	160.00
T.14S.	R.31E.	32	ALL	640.00
T.15S.	R.30E.	13	NE¼	160.00
T.15S.	R.30E.	13	SE¼NW¼	40.00
Total - Private				8,480.40
Total - State				18,968.52
Total - Caprock WHA				27,448.92
CEDAR HILLS MULE DEER AREA				
State				
T.08S.	R.20E.	05	LOT 01	40.30
T.08S.	R.20E.	05	LOT 02	40.26
T.08S.	R.20E.	05	SE¼	160.00
T.08S.	R.20E.	05	S½NE¼	80.00
T.08S.	R.20E.	16	ALL	640.00
Total - State				960.56
Total - Cedar Hills				960.56
GARNSEY BISON KILL SITE				
Private				
T.11S.	R.26E.	35	SE¼	160.00
T.12S.	R.26E.	03	LOT 01	40.90
T.12S.	R.26E.	03	LOT 02	40.88
State				
T.11S.	R.26E.	36	SW¼	160.00
T.12S.	R.26E.	02	N½N½	160.00
Total - Private				241.78
Total - State				320.00
Total - Garnsey Kill Site				561.78
HAYSTACK MOUNTAIN OHV AREA				
Private				
T.07S.	R.26E.	13	S½	320.00
T.07S.	R.26E.	24	ALL	640.00
T.07S.	R.26E.	36	ALL	640.00
T.07S.	R.27E.	18	N½SW¼	80.00
T.07S.	R.27E.	19	E½SE¼	80.00
T.07S.	R.27E.	20	E½NE¼	80.00
T.07S.	R.27E.	20	SW¼	160.00
T.07S.	R.27E.	31	E½	320.00
T.08S.	R.26E.	06	ALL	640.00
T.08S.	R.26E.	13	ALL	640.00

TABLE A9-1 (continued)

LANDS IDENTIFIED FOR ACQUISITION

Township/Range	Sec.	Acres
T.08S. R.26E.	14 ALL	640.00
T.08S. R.26E.	23 ALL	640.00
T.08S. R.26E.	24 W½	320.00
State		
T.07S. R.27E.	18 NW¼	160.00
T.08S. R.26E.	02 ALL	640.00
T.08S. R.27E.	07 ALL	640.00
Total - Private		5,200.00
Total - State		1,440.00
Total - Haystack Mountain		6,640.00

HAYSTACK BUTTE ARCHAEOLOGICAL DISTRICT

Private		
T.06S. R.27E.	33 SW¼SW¼	40.00
State		
T.06S. R.27E.	32 ALL	640.00
Total - Private		40.00
Total - State		640.00
Total - Haystack Butte		680.00

MESCALERO SANDS

Private		
T.11S. R.31E.	05 LOT 03	22.26
T.11S. R.31E.	05 LOT 04	22.45
T.11S. R.31E.	05 SW¼	160.00
T.11S. R.31E.	06 LOT 01	22.58
T.11S. R.31E.	06 LOT 02	22.66
T.11S. R.31E.	06 SE¼	160.00
T.12S. R.30E.	13 W½	320.00
State		
T.10S. R.30E.	32 ALL	640.00
T.11S. R.30E.	02 LOT 01	22.63
T.11S. R.30E.	02 LOT 02	22.56
T.11S. R.30E.	02 LOT 03	22.50
T.11S. R.30E.	02 LOT 04	22.43
T.11S. R.30E.	02 S½S½	160.00
T.11S. R.30E.	36 ALL	640.00
T.12S. R.30E.	02 ALL	640.00
T.12S. R.30E.	13 NW¼NE¼	40.00
T.12S. R.30E.	14 SE¼SE¼	40.00
T.12S. R.30E.	22 N½NE¼	80.00
T.12S. R.30E.	23 E½SE¼	80.00
T.12S. R.30E.	23 N½N½	160.00
T.12S. R.30E.	23 SE¼SE¼	40.00
T.12S. R.30E.	24 E½SE¼	80.00
T.12S. R.30E.	24 N½N½	160.00
T.12S. R.30E.	24 SE¼NE¼	40.00
T.12S. R.30E.	25 E½E½	160.00
T.12S. R.30E.	26 E½NE¼	80.00
T.12S. R.30E.	26 NE¼SE¼	40.00
T.12S. R.30E.	26 S½S½	160.00
T.12S. R.30E.	27 S½SE¼	80.00
T.12S. R.31E.	19 N½N½	160.00
T.12S. R.31E.	19 N½SE¼	80.00
T.12S. R.31E.	19 SE¼NE¼	40.00
T.12S. R.31E.	30 E½NE¼	80.00
T.12S. R.31E.	30 NE¼SE¼	40.00
T.12S. R.31E.	30 S½S½	160.00
Total - Private		729.95
Total - State		3,970.12
Total - Mescalero Sands		4,700.07

OVERFLOW WETLANDS ACEC

Private		
T.12S. R.26E.	03 LOT 03	41.06
T.12S. R.26E.	03 LOT 04	41.15
T.12S. R.26E.	03 NW¼SE¼	41.06
T.12S. R.26E.	03 SW¼	160.00
T.12S. R.26E.	03 SW¼SE¼	40.00
T.12S. R.26E.	03 S½NW¼	80.00
T.12S. R.26E.	05 LOT 02	33.66
T.12S. R.26E.	05 SW¼SE¼	40.00
T.12S. R.26E.	08 NE¼SE¼	40.00
T.12S. R.26E.	08 SE¼SE¼	40.00
T.12S. R.26E.	08 W½E½	160.00
T.12S. R.26E.	08 W½NE¼	80.00
T.12S. R.26E.	09 SW¼NW¼	40.00
T.12S. R.26E.	09 SW¼SW¼	40.00
T.12S. R.26E.	10 E½	320.00
T.12S. R.26E.	10 NE¼NW¼	40.00
T.12S. R.26E.	15 W½E½	160.00
T.12S. R.26E.	17 W½NW¼	80.00
T.12S. R.26E.	20 NW¼NE¼	40.00
T.12S. R.26E.	21 N½NW¼	80.00
State		
T.11S. R.25E.	36 ALL	640.00
T.12S. R.26E.	15 W½	320.00
T.12S. R.26E.	16 ALL	640.00
T.12S. R.26E.	21 N½NE¼	80.00
T.12S. R.26E.	22 NW¼NW¼	40.00
Total - Private		1,596.93
Total - State		1,720.00
Total - Overflow Wetlands		3,316.93

PECOS RIVER

Private		
T.04S. R.25E.	01 NE¼SW¼	40.00
T.04S. R.25E.	01 W½W½	160.00
T.04S. R.25E.	02 NW¼SW¼	40.00
T.04S. R.25E.	02 SW¼NW¼	40.00
T.04S. R.25E.	03 NW¼	160.00
T.04S. R.25E.	03 N½S½	160.00
T.04S. R.25E.	03 SE¼SE¼	40.00
T.04S. R.25E.	03 SW¼NE¼	40.00
T.04S. R.25E.	04 E½NE¼	80.00
T.04S. R.25E.	11 SW¼SE¼	40.00
T.04S. R.25E.	12 N½NE¼	80.00
T.04S. R.25E.	12 SE¼NW¼	40.00
T.04S. R.25E.	12 SW¼NE¼	40.00
T.04S. R.25E.	14 N½NE¼	80.00
T.04S. R.25E.	14 SE¼NE¼	40.00
T.04S. R.25E.	23 E½SE¼	80.00
T.04S. R.25E.	23 SE¼NE¼	40.00
T.04S. R.25E.	24 W½W½	160.00
T.04S. R.25E.	26 NE¼NE¼	40.00
T.05S. R.25E.	23 SE¼SW¼	40.00
T.05S. R.25E.	23 S½SE¼	80.00
T.05S. R.25E.	24 SW¼SW¼	40.00
T.05S. R.25E.	26 NW¼	160.00
T.05S. R.25E.	26 N½NE¼	80.00
T.05S. R.25E.	26 SW¼NE¼	40.00
T.05S. R.25E.	26 W½SW¼	80.00
T.05S. R.25E.	35 NW¼NW¼	40.00
T.06S. R.26E.	09 E½E½	80.00
T.06S. R.26E.	09 E½W½	80.00
T.06S. R.26E.	28 W½SW¼	80.00
T.06S. R.26E.	32 N½SE¼	80.00
T.06S. R.26E.	32 SE¼SE¼	40.00
T.06S. R.26E.	32 SW¼NE¼	40.00
T.06S. R.26E.	32 W½SE¼	80.00
T.06S. R.26E.	33 SW¼NW¼	40.00
T.07S. R.26E.	17 N½S½	160.00
T.07S. R.26E.	17 SE¼SE¼	40.00
T.07S. R.26E.	17 S½NW¼	80.00
T.07S. R.26E.	20 NW¼NE¼	40.00
T.07S. R.26E.	20 SW¼SE¼	40.00
T.07S. R.26E.	29 E½SW¼	80.00
T.07S. R.26E.	29 N½NE¼	80.00
T.07S. R.26E.	29 SE¼NW¼	40.00
T.07S. R.26E.	29 SW¼NE¼	40.00
T.07S. R.26E.	29 SW¼SW¼	40.00
T.07S. R.26E.	31 N½SE¼	80.00
T.07S. R.26E.	31 SE¼SW¼	40.00
T.07S. R.26E.	31 SW¼SE¼	40.00
T.09S. R.25E.	02 NW¼SE¼	40.00
T.09S. R.25E.	02 SW¼NE¼	40.00
T.09S. R.25E.	11 NW¼SE¼	40.00
T.09S. R.25E.	11 SW¼	160.00
T.09S. R.25E.	14 NW¼NW¼	40.00
T.09S. R.25E. W½NE¼NW¼	14	20.00
T.09S. R.25E.	22 N½NE¼	80.00
T.10S. R.25E.	33 NE¼NE¼	40.00
T.10S. R.25E.	34 NW¼NE¼	40.00
T.10S. R.25E.	34 N½NW¼	80.00
T.10S. R.25E.	34 SW¼	160.00
T.10S. R.25E.	34 SW¼NW¼	40.00
T.10S. R.25E.	34 W½SE¼	80.00
T.12S. R.26E. S½S½S½SE¼SE¼	33	5.00
T.12S. R.26E. S½S½S½SW¼SE¼	33	5.00
T.12S. R.26E. S½S½S½SW¼SW¼	33	5.00
T.12S. R.26E. S½S½S½SW¼SW¼	34	3.11
T.13S. R.26E.	03 LOT 04	33.48
T.13S. R.26E. N½SW¼NW¼	03	20.00
T.13S. R.26E. S½SW¼NW¼	03	20.00

TABLE A9-1 (continued)

LANDS IDENTIFIED FOR ACQUISITION

Township/Range	Sec.	Acres
T.13S. R.26E.	03 W½SW¼	80.00
T.13S. R.26E.	04 LOT 01	42.70
T.13S. R.26E.	04 LOT 02	42.66
T.13S. R.26E.	04 LOT 03	42.61
T.13S. R.26E.	04 NE¼SE¼	40.00
T.13S. R.26E.	04 N½SW¼NE¼	20.00
T.13S. R.26E.	04 SE¼NE¼	40.00
T.13S. R.26E.	04 SE¼NW¼	30.00
T.13S. R.26E.	04 W½S½SW¼NE¼	5.00
T.13S. R.26E.	10 NW¼NW¼	20.00
T.13S. R.26E.	14 E½	160.00
T.13S. R.26E.	14 SW¼	160.00
T.13S. R.26E.	14 SW¼NW¼	40.00
T.13S. R.26E.	14 SW¼SE¼NW¼	10.00
T.13S. R.26E.	23 ALL	640.00
T.14S. R.26E.	24 S½SW¼	80.00
T.14S. R.26E.	24 SW¼NE¼	40.00
T.14S. R.26E.	25 W½	320.00
State		
T.04S. R.25E.	02 E½SW¼	80.00
T.04S. R.25E.	02 SE¼	160.00
T.04S. R.25E.	02 SE¼NW¼	40.00
T.04S. R.25E.	02 SW¼NE¼	40.00
T.04S. R.25E.	02 SW¼SW¼	40.00
T.04S. R.25E.	23 NE¼NE¼	40.00
T.04S. R.25E.	26 E½SE¼	80.00
T.04S. R.25E.	26 SE¼NE¼	40.00
T.04S. R.25E.	35 E½E½	160.00
T.04S. R.25E.	36 ALL	640.00
T.05S. R.25E.	01 LOT 01	40.02
T.05S. R.25E.	01 LOT 02	40.04
T.05S. R.25E.	01 SE¼	160.00
T.05S. R.25E.	01 S½NE¼	80.00
T.05S. R.25E.	23 W½SW¼	80.00
T.06S. R.26E.	16 N½N½	160.00
T.07S. R.25E.	36 E½SE¼	80.00
T.07S. R.26E.	32 ALL	640.00
T.09S. R.25E.	02 LOT 01	40.03
T.09S. R.25E.	02 E½SE¼	80.00
T.09S. R.25E.	02 SE¼NE¼	40.00
Total - Private		6,044.56
Total - State		2,760.09
Total - Pecos River		8,804.65

PLAYA LAKES

Private

T.06S. R.20E.	28 NE¼SE¼	40.00
T.06S. R.23E.	28 SE¼	160.00
T.07S. R.29E.	13 SE¼SE¼	40.00
T.07S. R.29E.	24 NE¼NE¼	40.00
T.07S. R.30E.	18 LOT 01	42.34
T.07S. R.30E.	18 LOT 02	42.23
T.07S. R.30E.	18 LOT 03	42.12
T.07S. R.30E.	18 LOT 04	42.01
T.07S. R.30E.	18 E½W½	160.00
T.07S. R.30E.	19 LOT 01	41.90
T.07S. R.30E.	19 NE¼NW¼	40.00
T.08S. R.24E.	03 W½SE¼	80.00
T.09S. R.30E.	07 SE¼SE¼	40.00
T.13S. R.26E.	01 SW¼SW¼	40.00
T.14S. R.25E.	26 S½SE¼	80.00
T.14S. R.30E.	06 SE¼SW¼	40.00
T.14S. R.30E.	06 SW¼SE¼	40.00
State		
T.14S. R.30E.	06 LOT 07	37.90
T.14S. R.30E.	07 LOT 01	37.92
T.14S. R.30E.	07 LOT 02	37.93
T.14S. R.30E.	07 E½NW¼	160.00
T.14S. R.30E.	18 LOT 01	37.91
T.14S. R.30E.	18 LOT 02	37.85
T.14S. R.30E.	18 E½W½	160.00
Total - Private		1,010.60
Total - State		509.51
Total - Playa Lakes		1,520.11

PECOS RIVER DEER HABITAT

State

T.06S. R.27E.	16 ALL	640.00
T.06S. R.27E.	32 ALL	640.00
T.07S. R.26E.	36 ALL	640.00
T.08S. R.26E.	02 ALL	640.00
Total - State		2,560.00
Total - Pecos Deer Habitat		2,560.00

LINCOLN COUNTY

FORT STANTON AREA

Private

T.09S. R.14E.	32 LOT 01	10.68
T.09S. R.14E.	32 SW¼SE¼	40.00
T.09S. R.14E.	32 S½SW¼	80.00
T.10S. R.14E.	04 LOT 01	10.50
T.10S. R.14E.	04 LOT 02	37.14
T.10S. R.14E.	04 SW¼SW¼	40.00
T.10S. R.14E.	05 LOT 01	39.78
T.10S. R.14E.	05 LOT 02	23.32
T.10S. R.14E.	05 LOT 03	32.10
T.10S. R.14E.	05 LOT 04	32.10
T.10S. R.14E.	05 LOT 05	32.10
T.10S. R.14E.	05 SW¼NE¼	40.00
T.10S. R.14E.	05 S½	360.00
T.10S. R.14E.	05 S½NW¼	80.00
T.10S. R.14E.	08 N½N½	160.00
T.10S. R.14E.	09 LOT 03	16.48
T.10S. R.14E.	09 LOT 04	30.56
T.10S. R.14E.	09 NWNW¼	40.00
T.10S. R.14E.	09 S½NW¼	160.00

State

T.09S. R.14E.	29 W½SW¼	80.00
T.09S. R.14E.	32 NE¼SW¼	40.00
T.09S. R.14E.	32 NW¼SW¼	40.00
T.09S. R.14E.	32 W½NW¼	80.00
T.09S. R.15E.	36 ALL	640.00
T.10S. R.14E.	16 NW¼	160.00
T.10S. R.14E.	16 SE¼	160.00
T.10S. R.14E.	16 SE¼NE¼	40.00
T.10S. R.14E.	16 SW¼	160.00
T.10S. R.14E.	16 W½NE¼	80.00
T.10S. R.16E.	02 E½NW¼	80.00
T.10S. R.16E.	02 NE¼	160.00
T.10S. R.16E.	02 NE¼SW¼	40.00
Total - Private		1,264.76
Total - State		1,760.00
Total - Fort Stanton		3,024.76

PLAYAS

Private

T.06S. R.09E.	11 N½NW¼	80.00
T.08S. R.14E.	18 NE¼NE¼	40.00
Total - Private		120.00
Total - Playas		120.00

VALLEY OF FIRES

Private

T.07S. R.10E.	20 Lot 2	39.54
T.07S. R.10E.	20 E½NE¼SE¼	20.00
T.07S. R.10E.	20 E½NE¼SW¼SE¼	5.00
T.07S. R.10E.	20 E½SW¼SW¼SE¼	5.00
T.07S. R.10E.	20 SE¼NW¼NE¼SE¼	2.50
T.07S. R.10E.	20 SE¼SE¼NW¼SE¼	2.50
T.07S. R.10E.	20 SE¼SW¼SE¼	10.00
T.07S. R.10E.	20 SW¼NE¼SE¼	10.00
T.07S. R.10E.	20 SW¼NE¼SW¼SE¼	2.50
T.07S. R.10E.	29 LOT 01	17.76
T.07S. R.10E.	29 LOT 02	9.91
T.07S. R.10E.	29 LOT 08	13.00
T.07S. R.10E.	29 LOT 09	7.51
T.07S. R.10E.	29 LOT 10	7.17
T.07S. R.10E.	29 LOT 15	22.86
T.07S. R.10E.	29 LOT 16	37.73
T.07S. R.10E.	29 LOT 17	34.87
T.07S. R.10E.	29 LOT 18	32.31
T.07S. R.10E.	29 LOT 19	16.92
T.07S. R.10E.	29 NW¼NE¼	40.00
Total - Private		337.08
Total - Valley of Fires		337.08

TABLE A9-1 (continued)

LANDS IDENTIFIED FOR ACQUISITION

LITTLE BLACK PEAK

Township/Range	Sec.	Acres
Private		
T.06S. R.09E.	01 LOT 01	26.20
T.06S. R.09E.	01 LOT 02	25.94
T.06S. R.09E.	01 LOT 03	25.86
T.06S. R.09E.	01 LOT 04	25.78
T.06S. R.09E.	01 LOT 05	40.00
T.06S. R.09E.	01 LOT 06	40.00
T.06S. R.09E.	01 LOT 07	40.00
T.06S. R.09E.	01 LOT 08	40.00
T.06S. R.09E.	01 LOT 09	40.00
T.06S. R.09E.	01 LOT 10	40.00
T.06S. R.09E.	01 LOT 11	40.00
T.06S. R.09E.	01 NW¼SE¼	40.00
T.06S. R.09E.	11 SW¼NE¼	40.00
T.06S. R.09E.	11 W½SE¼	80.00
T.06S. R.09E.	24 E½NW¼	80.00
T.06S. R.09E.	24 NW¼SE¼	40.00
T.06S. R.09E.	24 NW¼SW¼	40.00
T.06S. R.09E.	24 S½SE¼	80.00
T.06S. R.09E.	25 E½	320.00
T.06S. R.10E.	05 LOT 12	40.00
T.06S. R.10E.	05 NW¼SW¼	40.00
T.06S. R.10E.	05 S½S½	160.00
T.06S. R.10E.	06 LOT 01	38.72
T.06S. R.10E.	06 LOT 02	38.76
T.06S. R.10E.	06 LOT 03	38.80
T.06S. R.10E.	06 LOT 04	31.13
T.06S. R.10E.	06 LOT 05	32.18
T.06S. R.10E.	06 LOT 06	40.00
T.06S. R.10E.	06 LOT 07	40.00
T.06S. R.10E.	06 LOT 08	40.00
T.06S. R.10E.	06 LOT 09	40.00
T.06S. R.10E.	06 LOT 10	40.00
T.06S. R.10E.	06 LOT 12	12.40
T.06S. R.10E.	09 W½NW¼	80.00
T.06S. R.10E.	22 E½W½	160.00
T.06S. R.10E.	22 NW¼SW¼	40.00
T.06S. R.10E.	22 W½SE¼	80.00
T.06S. R.10E.	27 NW¼	160.00
T.06S. R.10E.	27 N½SW¼	80.00
T.06S. R.10E.	27 SE¼SW¼	40.00
T.06S. R.10E.	27 W½NE¼	80.00
T.06S. R.10E.	30 LOT 02	34.29
T.06S. R.10E.	30 LOT 03	34.41
T.06S. R.10E.	30 LOT 04	34.52
T.06S. R.10E.	31 LOT 01	34.64
T.06S. R.10E.	31 LOT 02	30.77
T.06S. R.10E.	31 LOT 03	34.89
T.06S. R.10E.	31 LOT 04	35.02
T.06S. R.10E.	32 All	640.00
T.06S. R.10E.	34 NW¼NE¼	40.00
T.06S. R.10E.	35 W½W½	160.00
T.07S. R.09E.	01 E½E½	160.00
T.07S. R.09E.	11 NE¼SE¼	40.00
T.07S. R.09E.	12 NE¼	160.00
T.07S. R.10E.	03 LOT 01	22.58
T.07S. R.10E.	03 LOT 02	39.93
T.07S. R.10E.	03 LOT 03	8.75
T.07S. R.10E.	03 LOT 04	37.93
T.07S. R.10E.	03 LOT 05	9.50
T.07S. R.10E.	03 NE¼SE¼	40.00
T.07S. R.10E.	03 S½SE¼	80.00
T.07S. R.10E.	10 LOT 04	26.70
T.07S. R.10E.	15 LOT 01	33.20
T.07S. R.10E.	15 LOT 02	35.32
T.07S. R.10E.	15 LOT 03	2.20
T.07S. R.10E.	15 LOT 04	14.70
T.07S. R.10E.	15 LOT 05	31.30
T.07S. R.10E.	15 E½SW¼	80.00
T.07S. R.10E.	21 E½SE¼	80.00
T.07S. R.10E.	21 SW¼SE¼	40.00
T.07S. R.10E.	29 LOT 03	33.17
T.07S. R.10E.	29 LOT 04	1.20
T.07S. R.10E.	29 LOT 05	39.47
T.07S. R.10E.	29 LOT 06	36.00
T.07S. R.10E.	29 LOT 07	32.25
T.07S. R.10E.	29 LOT 11	16.05
T.07S. R.10E.	29 LOT 12	44.21
T.07S. R.10E.	29 LOT 13	38.82
T.07S. R.10E.	29 LOT 14	6.67
T.07S. R.10E.	29 LOT 20	30.93
T.07S. R.10E.	29 NW¼NE¼	40.00
T.07S. R.10E.	30 LOT 01	26.50
T.07S. R.10E.	30 LOT 02	15.88
T.07S. R.10E.	31 LOT 01	14.00
T.07S. R.10E.	31 LOT 02	18.00
T.07S. R.10E.	31 LOT 03	14.65
T.07S. R.10E.	31 LOT 04	24.00
T.07S. R.10E.	31 N½NE¼	80.00
State		
T.06S. R.09E.	02 LOT 01	25.69
T.06S. R.09E.	02 LOT 02	25.58
T.06S. R.09E.	02 LOT 07	40.00
T.06S. R.09E.	02 LOT 08	40.00
T.06S. R.09E.	02 LOT 09	40.00
T.06S. R.09E.	02 LOT 10	40.00
T.06S. R.09E.	02 SE¼	160.00
T.06S. R.09E.	16 All	640.00
T.07S. R.10E.	16 LOT 01	42.96
T.07S. R.10E.	16 LOT 02	42.96
T.07S. R.10E.	16 LOT 03	42.96
T.07S. R.10E.	16 LOT 04	41.03
T.07S. R.10E.	16 LOT 05	41.05
T.07S. R.10E.	16 LOT 06	41.07
T.07S. R.10E.	16 LOT 07	44.13
T.07S. R.10E.	16 NW¼	160.00
T.07S. R.10E.	16 NW¼SE¼	40.00
T.07S. R.10E.	16 N½SW¼	80.00
T.07S. R.10E.	16 W½NE¼	80.00
T.08S. R.09E.	02 All	640.00

Total - Private	4,988.22
Total - State	2,307.43
Total - Little Black Peak	7,295.65

CARRIZOZO LAVA FLOW

Township/Range	Sec.	Acres
Private		
T.07S. R.09E.	12 N½SW¼	80.00
T.07S. R.09E.	12 SE¼NW¼	40.00
T.07S. R.09E.	23 NW¼NE¼	40.00
T.07S. R.10E.	16 LOT 04	41.03
T.07S. R.10E.	16 LOT 05	41.05
T.07S. R.10E.	16 LOT 06	41.07
T.07S. R.10E.	16 LOT 07	44.13
T.07S. R.10E.	16 NW¼	160.00
T.07S. R.10E.	16 NW¼SE¼	40.00
T.07S. R.10E.	16 N½SW¼	80.00
T.07S. R.10E.	16 W½NE¼	80.00
T.08S. R.09E.	02 ALL	640.00
State		
T.07S. R.09E.	36 LOT 01	39.86
T.07S. R.09E.	36 LOT 02	39.90
T.07S. R.09E.	36 LOT 03	39.94
T.07S. R.09E.	36 LOT 04	39.98
T.07S. R.09E.	36 N½	320.00
T.07S. R.09E.	36 N½S½	160.00
T.08S. R.09E.	16 LOT 02	38.32
T.08S. R.09E.	16 LOT 03	38.32
T.08S. R.09E.	16 LOT 04	38.33
T.08S. R.09E.	16 LOT 05	35.30
T.08S. R.09E.	16 LOT 06	35.29
T.08S. R.09E.	16 LOT 07	35.28
T.08S. R.09E.	16 LOT 08	33.40
T.08S. R.09E.	16 NW¼	160.00
T.08S. R.09E.	16 N½SW¼	80.00
T.08S. R.09E.	19 LOT 01	16.54

Total - Private	1,327.28
Total - State	1,150.46
Total - Carrizozo Lava Flow	2,477.74

CAVE COMPLEX ACEC

Private			
DEBACA COUNTY			
T.00S.	R.00E.	00 0000	4,120.00
CHAVES COUNTY			
T.00S.	R.00E.	00 0000	320.00
LINCOLN COUNTY			
T.00S.	R.00E.	00 0000	160.00
T.00S.	R.00E.	00 0000	160.00
T.00S.	R.00E.	00 0000	160.00

Total - Lincoln County	480.00

Note: Locations of parcels near caves are not identified because of the requirement that cave locations not be disseminated.

TABLE A9-1 (continued)

LANDS IDENTIFIED FOR ACQUISITION

Township/Range	Sec.	Acres	Township/Range	Sec.	Acres	Township/Range	Sec.	Acres

ACREAGE SUMMARY

CHAVES COUNTY	
Private	23,664.22
State	33,848.80
Total	57,513.02
DEBACA COUNTY	
Private	4,120.00
State	0.00
Total	4,120.00
LINCOLN COUNTY	
Private	8,517.34
State	5,217.89
Total	13,735.23
GRAND TOTAL ALL COUNTIES	
Private	36,301.56
State	39,066.69
GRAND TOTAL	75,368.25

APPENDIX 10
PUBLIC LANDS IDENTIFIED FOR DISPOSAL

This appendix lists the legal descriptions of BLM-administered lands that may be suitable for consideration for disposal. These lands were nominated for disposal by the public or were identified by BLM staff as not needed for implementation of BLM management goals and policies. This appendix reflects a number of changes made to Appendix 9 published in the Draft Roswell RMP/EIS, which resulted from BLM and public review and comment. This list is not intended to be inclusive.

The lands identified in this appendix would be disposed under the authority of Sections 203 (sales) and 206 (exchanges) of the Federal Land Policy and Management Act of 1976, based on the disposal criteria listed in Appendix 8. Other authorities (e.g., Recreation and Public Purposes Act) could apply, as well. Because this preliminary list of lands has not had close scrutiny to actually determine the suitability of these lands for disposal, it is not possible at this time to identify the specific authority under which disposals would be made.

TABLE A10-1

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres	Township/Range	Sec.	Acres	Township/Range	Sec.	Acres
CHAVES COUNTY								
T04S R22E	04 LOT 03	40.13	T07S R25E	04 S½	320.00	T07S R26E	30 NE¼NW¼	40.00
T04S R22E	04 E½SW¼	80.00	T07S R25E	04 S½N½	160.00	T08S R21E	05 LOT 02	39.84
T04S R22E	04 SE¼NW¼	40.00	T07S R25E	05 LOT 01	39.99	T08S R21E	05 LOT 03	39.88
T04S R22E	10 SE¼SW¼	40.00	T07S R25E	05 LOT 02	39.96	T08S R21E	05 LOT 04	39.91
T04S R22E	21 N½N½	160.00	T07S R25E	05 SE¼	160.00	T08S R21E	05 N½SW¼	80.00
T04S R23E	18 LOT 01	42.96	T07S R25E	05 S½NE¼	80.00	T08S R21E	05 SE¼NE¼	40.00
T04S R23E	18 LOT 02	43.09	T07S R25E	09 N½SE¼	80.00	T08S R21E	05 SW¼NE¼	40.00
T04S R23E	18 LOT 03	43.21	T07S R25E	09 S½S½	160.00	T08S R21E	05 S½NW¼	80.00
T04S R23E	18 LOT 04	43.34	T07S R25E	10 ALL	640.00	T08S R21E	05 W½SE¼	80.00
T04S R23E	18 E½W½	160.00	T07S R25E	15 ALL	640.00	T08S R21E	06 SE¼	160.00
T06S R25E	09 S½	320.00	T07S R25E	18 LOT 01	37.62	T08S R21E	07 LOT 09	55.07
T06S R25E	10 S½	320.00	T07S R25E	18 NE¼NW¼	40.00	T08S R21E	07 LOT 16	55.01
T06S R25E	15 ALL	640.00	T07S R25E	19 LOT 01	37.60	T08S R21E	07 LOT 18	40.00
T06S R25E	21 E½	320.00	T07S R25E	19 LOT 02	37.20	T08S R21E	07 SW¼NE¼	40.00
T06S R25E	21 E½W½	160.00	T07S R25E	19 LOT 03	36.80	T08S R24E	01 LOT 04	39.49
T06S R25E	21 W½SW¼	80.00	T07S R25E	19 LOT 04	36.40	T08S R24E	01 SW¼NW¼	40.00
T06S R25E	22 N½	320.00	T07S R25E	20 ALL	640.00	T08S R24E	01 S½	320.00
T06S R25E	22 N½S½	160.00	T07S R25E	21 W½	320.00	T08S R24E	03 E½SE¼	80.00
T06S R25E	22 S½SW¼	80.00	T07S R25E	22 NW¼SE¼	40.00	T08S R24E	03 SW¼	160.00
T06S R25E	23 N½	320.00	T07S R25E	22 N½	320.00	T08S R24E	10 N½	320.00
T06S R25E	26 ALL	640.00	T07S R25E	22 W½SW¼	80.00	T08S R24E	10 N½S½	160.00
T06S R25E	27 NW¼	160.00	T07S R25E	24 E½SE¼	80.00	T08S R24E	10 S½SE¼	80.00
T06S R25E	27 N½SW¼	80.00	T07S R25E	25 S½N½	160.00	T08S R24E	11 ALL	640.00
T06S R25E	27 S½SE¼	80.00	T07S R25E	25 W½SE¼	80.00	T08S R25E	04 LOT 01	39.91
T06S R25E	28 E½	320.00	T07S R25E	28 ALL	640.00	T08S R25E	04 LOT 02	39.94
T06S R25E	33 N½NE¼	80.00	T07S R25E	29 ALL	640.00	T08S R25E	04 LOT 03	39.97
T06S R25E	33 SE¼	160.00	T07S R25E	30 LOT 01	36.20	T08S R25E	04 NW¼NW¼	40.00
T06S R25E	33 SW¼NE¼	40.00	T07S R25E	30 LOT 02	36.42	T08S R25E	04 S½	320.00
T07S R21E	20 S½S½	160.00	T07S R25E	30 LOT 03	37.34	T08S R25E	04 S½N½	160.00
T07S R21E	30 LOT 01	55.74	T07S R25E	30 LOT 04	37.75	T08S R25E	05 E½NW¼	80.00
T07S R21E	30 LOT 03	40.00	T07S R25E	30 E½	320.00	T08S R25E	05 NE¼	160.00
T07S R21E	30 LOT 04	40.00	T07S R25E	30 E½W½	160.00	T08S R25E	05 S½	320.00
T07S R21E	30 LOT 05	40.00	T07S R25E	31 LOT 01	37.85	T08S R25E	06 LOT 01	37.85
T07S R21E	30 LOT 08	55.70	T07S R25E	31 LOT 02	37.85	T08S R25E	06 LOT 02	37.95
T07S R21E	30 LOT 11	40.00	T07S R25E	31 LOT 03	37.75	T08S R25E	06 E½SW¼	80.00
T07S R21E	30 LOT 12	40.00	T07S R25E	31 LOT 04	37.65	T08S R25E	06 SE¼	160.00
T07S R21E	30 LOT 17	40.00	T07S R25E	31 E½	320.00	T08S R25E	08 E½SW¼	80.00
T07S R21E	30 LOT 18	40.00	T07S R25E	31 E½W½	160.00	T09S R22E	33 ALL	640.00
T07S R21E	30 LOT 19	40.00	T07S R25E	33 ALL	640.00	T09S R22E	34 ALL	640.00
T07S R21E	30 N½SE¼	80.00	T07S R25E	34 ALL	640.00	T10S R22E	03 LOT 01	40.56
T07S R24E	23 SE¼	160.00	T07S R26E	06 LOT 03	39.95	T10S R22E	03 LOT 02	40.58
T07S R24E	24 S½	320.00	T07S R26E	06 LOT 04	36.77	T10S R22E	03 LOT 03	40.61
T07S R24E	25 ALL	640.00	T07S R26E	07 E½SW¼	80.00	T10S R22E	03 LOT 04	40.64
T07S R24E	26 E½	320.00	T07S R26E	18 LOT 02	36.50	T10S R22E	03 S½	320.00
T07S R24E	35 E½	320.00	T07S R26E	18 SE¼NW½	40.00	T10S R22E	03 S½N½	160.00
T07S R25E	01 LOT 03	40.15	T07S R26E	18 S½NE¼	80.00	T10S R22E	04 LOT 01	40.74
T07S R25E	01 LOT 04	40.21	T07S R26E	19 LOT 01	36.65	T10S R22E	04 LOT 02	40.77
T07S R25E	01 S½NW¼	80.00	T07S R26E	19 LOT 02	36.75	T10S R22E	04 LOT 03	40.79
T07S R25E	03 LOT 01	40.34	T07S R26E	19 LOT 03	36.85	T10S R22E	04 NE¼SE¼	40.00
T07S R25E	03 LOT 02	40.29	T07S R26E	19 LOT 04	36.95	T10S R22E	04 S½NE¼	80.00
T07S R25E	03 LOT 03	40.25	T07S R26E	19 E½W½	160.00	T10S R22E	10 NE¼	160.00
T07S R25E	03 LOT 04	40.20	T07S R26E	19 W½E½	160.00	T10S R22E	11 N½	320.00
T07S R25E	03 S½	320.00	T07S R26E	30 LOT 01	36.97	T10S R22E	12 N½NE¼	80.00
T07S R25E	03 S½N½	160.00	T07S R26E	30 LOT 02	36.92	T10S R23E	33	
T07S R25E	04 LOT 01	40.04	T07S R26E	30 LOT 03	36.87		E½SE¼NW¼SW¼	5.00
T07S R25E	04 LOT 02	40.01	T07S R26E	30 LOT 04	36.82	T10S R23E	33	
T07S R25E	04 LOT 03	39.97	T07S R26E	30 E½NW¼	80.00		W½E½SW¼SW¼	10.00
T07S R25E	04 LOT 04	39.92	T07S R26E	30 NE¼	160.00	T10S R29E	22 NE¼NW¼	40.00

TABLE A10-1 (continued)

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres
T10S R29E	23 SE¼	160.00
T10S R29E	26 NE¼NE¼	40.00
T10S R30E	25 N½	320.00
T10S R30E	26 NW¼	160.00
T10S R30E	26 N½NE¼	80.00
T10S R30E	27 N½	320.00
T10S R30E	28 N½	320.00
T10S R30E	29 N½	320.00
T11S R26E	13 S½	320.00
T11S R26E	14 ALL	640.00
T11S R26E	22 E½	320.00
T11S R26E	22 E½W½	160.00
T11S R26E	22 W½NW¼	80.00
T11S R26E	23 ALL	640.00
T11S R26E	24 SE¼	160.00
T11S R26E	24 S½NW¼	80.00
T11S R26E	25 S½	320.00
T11S R26E	27 E½E½	160.00
T11S R26E	27 NW¼NE¼	40.00
T11S R26E	35 NW¼	160.00
T11S R26E	35 N½SW¼	80.00
T11S R27E	19 N½SE¼	80.00
T11S R27E	30 LOT 03	36.02
T11S R27E	30 LOT 04	36.23
T11S R27E	31 LOT 01	36.83
T11S R27E	31 LOT 02	37.80
T11S R27E	31 LOT 03	38.78
T11S R27E	31 LOT 04	39.75
T11S R27E	31 E½SW¼	80.00
T11S R27E	31 S½SE¼	80.00
T12S R27E	04 S½	320.00
T12S R27E	04 S½N½	160.00
T12S R27E	05 N½SW¼	80.00
T12S R27E	05 SE¼	160.00
T12S R27E	05 S½N½	160.00
T12S R27E	06 LOT 01	40.52
T12S R27E	06 LOT 02	40.38
T12S R27E	06 S½NE¼	80.00
T12S R27E	06 W½SE¼	80.00
T12S R27E	07 LOT 01	40.87
T12S R27E	07 LOT 02	40.82
T12S R27E	07 LOT 03	40.98
T12S R27E	07 LOT 04	41.13
T12S R27E	07 E½W½	160.00
T12S R27E	07 SE¼	160.00
T12S R27E	07 W½NE¼	80.00
T12S R27E	08 E½	320.00
T12S R27E	09 ALL	640.00
T14S R19E	02 LOT 05	11.92
T14S R19E	02 LOT 06	24.76
T14S R19E	02 LOT 07	24.76
T14S R19E	02 LOT 08	24.76
T14S R20E	04 LOT 05	50.18
T14S R20E	04 LOT 06	22.20
T14S R20E	04 LOT 07	15.18
T14S R20E	04 SW¼	160.00
T14S R20E	04 S½NW¼	80.00
T14S R20E	05 LOT 06	40.41
T14S R20E	05 LOT 07	40.54
T14S R20E	05 LOT 08	40.68
T14S R20E	05 LOT 09	40.81
T14S R20E	05 LOT 10	17.41
T14S R20E	05 LOT 11	17.34
T14S R20E	05 E½SW¼	80.00
TOTAL - Chaves County		**33,343.50**
DeBACA COUNTY		
T01N R20E	33 All	640.00
T01N R21E	01 LOT 01	40.09
T01N R21E	01 LOT 02	40.30
T01N R21E	01 LOT 03	40.49
T01N R21E	01 LOT 04	40.71
T01N R21E	05 LOT 01	40.58
T01N R21E	05 LOT 02	40.55
T01N R21E	05 LOT 03	40.55
T01N R21E	05 LOT 04	40.52
T01N R21E	05 S½N½	160.00
T01N R21E	06 LOT 01	40.46
T01N R21E	06 LOT 02	40.32
T01N R21E	06 LOT 03	40.19
T01N R21E	06 SE¼NE¼	40.00
T01N R21E	11 NE¼SE¼	40.00
T01N R21E	12 NW¼SW¼	40.00
T01N R21E	12 NW¼SW¼	40.00
T01N R21E	24 SE¼SE¼	160.00
T01N R21E	29 N½N½	160.00
T01N R21E	33 ALL	640.00
T01N R22E	05 NW¼SE¼	40.00
T01N R22E	07 LOT 04	40.68
T01N R22E	07 S½SE¼	80.00
T01N R22E	11 NW¼	160.00
T01N R22E	11 W½NE¼	80.00
T01N R22E	19 NE¼NE¼	40.00
T01N R22E	20 NW¼NW¼	40.00
T01N R22E	20 SE¼	160.00
T01N R22E	21 NE¼	160.00
T01N R22E	21 S½	320.00
T01N R22E	22 SW¼NE¼	40.00
T01N R22E	28 NW¼SW¼	40.00
T01N R22E	28 SW¼NW¼	40.00
T01N R22E	31 E½E½	160.00
T01N R24E	31 NE¼NW¼	40.00
T01N R24E	31 N½NE¼	80.00
T01N R24E	34 NW¼NW¼	40.00
T01N R24E	34 SW¼	160.00
T02N R20E	24 SW¼SW¼	40.00
T02N R20E	25 S½SE¼	80.00
T02N R21E	20 N½NW¼	80.00
T02N R21E	30 LOT 02	39.53
T02N R21E	30 NE¼NE¼	40.00
T02N R21E	31 LOT 01	39.31
T02N R21E	31 LOT 02	39.16
T06N R25E	01 LOT 03	160.00
T01S R22E	05 Lot 4	41.30
T01S R22E	05 SW¼NE¼	40.00
T01S R22E	07 SE¼SW¼	40.00
T01S R22E	27 SE¼SE¼	40.00
T01S R22E	27 W½NE¼	80.00
T01S R22E	28 SW¼SW¼	40.00
T01S R22E	33 S½NW¼	80.00
T01S R23E	01 LOT 09	40.00
T01S R23E	01 LOT 10	40.00
T01S R23E	01 LOT 11	40.00
T01S R23E	01 LOT 12	40.00
T01S R23E	06 LOT 08	40.00
T01S R23E	12 W½SW¼	80.00
T01S R23E	13 NE¼NE¼	40.00
T01S R23E	26 W½W½	160.00
T01S R23E	35 NE¼NE¼	40.00
T01S R23E	35 SW¼	160.00
T01S R23E	35 SW¼SE¼	40.00
T01S R24E	18 LOT 01	39.38
T01S R24E	18 LOT 02	39.44
T01S R24E	19 NE¼SE¼	40.00
T01S R24E	20 SE¼SW¼	40.00
T01S R24E	20 SW¼SE¼	40.00
T01S R24E	21 NW¼SW¼	40.00
T01S R24E	34 NW¼	160.00
T02S R21E	22 N½	320.00
T02S R21E	23 N½	320.00
T02S R21E	24 NW¼SW¼	40.00
T02S R21E	24 N½	320.00
T02S R21E	30 Lot 4	33.20
T02S R21E	30 SE¼SW¼	40.00
T02S R21E	31 E½	320.00
T02S R21E	31 E½W½	160.00
T02S R21E	31 Lot 1	33.27
T02S R21E	31 Lot 2	33.46
T02S R21E	31 Lot 3	33.65
T02S R21E	31 Lot 4	33.84
T02S R21E	33 N½N½	160.00
T02S R21E	33 S½S½	160.00
T02S R21E	34 NW¼	160.00
T02S R22E	09 All	640.00
T02S R22E	11 NE¼NW¼	40.00
T02S R22E	11 NW¼NE¼	40.00
T02S R22E	11 SW¼SW¼	40.00
T02S R22E	12 S½N½	160.00
T02S R22E	27 SE¼NE¼	40.00
T02S R22E	27 W½NE¼	80.00
T02S R22E	28 SW¼SW¼	40.00
T02S R22E	35 S½	320.00
T02S R23E	02 LOT 01	40.06
T02S R23E	03 LOT 01	40.14
T02S R23E	03 LOT 02	40.13
T02S R23E	03 LOT 03	40.08
T02S R23E	03 NW¼SE¼	40.00
T02S R23E	03 NW¼SW¼	40.00
T02S R23E	03 S½N½	160.00
T02S R24E	08 NW¼SW¼	40.00
T02S R24E	17 NE¼NW¼	40.00
T02S R24E	17 N½NE¼	80.00
T02S R24E	19 LOT 01	39.54
T02S R24E	32 E½NE¼	80.00
T03S R21E	10 N½SW¼	80.00

TABLE A10-1 (continued)

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres
T03S R21E	10 SE¼SW¼	40.00
T03S R22E	09 SW¼NW¼	40.00
T03S R22E	10 N½	320.00
T03S R22E	10 SW¼	160.00
T03S R22E	10 N½SE¼	80.00
T03S R22E	11 NE¼	160.00
T03S R22E	11 SE¼NW¼	40.00
T03S R22E	11 NE¼SW¼	40.00
T03S R22E	11 N½SE¼	80.00
T03S R22E	12 SW¼NE¼	40.00
T03S R22E	12 NW¼	160.00
T03S R22E	12 NW¼SW¼	40.00
T03S R22E	13 SE¼NE¼	40.00
T03S R22E	13 N½S½	160.00
T03S R22E	14 N½SW¼	80.00
T03S R22E	14 NW¼SE¼	40.00
T03S R22E	15 N½SE¼	80.00
T03S R23E	07 Lot 03	38.05
T03S R23E	07 Lot 04	38.84
T03S R23E	07 E½SW¼	80.00
T03S R23E	07 SE¼	160.00
TOTAL - DeBaca County		12,327.82
GUADALUPE		
T03N R17E	01 LOT 02	39.85
T03N R17E	01 LOT 03	39.75
T03N R17E	01 LOT 04	39.65
T03N R17E	01 SE¼NE¼	40.00
T03N R17E	04 LOT 01	39.41
T03N R17E	04 LOT 02	39.43
T03N R17E	04 LOT 03	39.45
T03N R17E	04 LOT 04	39.47
T03N R17E	04 S½N½	160.00
T03N R18E	17 E½SW¼	80.00
T03N R18E	18 W½NW¼SE¼	20.00
T03N R18E	18 W½SE¼NW¼	20.00
T03N R18E	19 SE¼SW¼	40.00
T04N R17E	19 E½SE¼	80.00
T04N R17E	21 SE¼NE¼	40.00
T04N R17E	21 S½SE¼	80.00
T04N R17E	27 S½NW¼	80.00
T04N R17E	29 W½	320.00
T05N R19E	03 Lot 01	39.23
T05N R19E	03 Lot 02	39.28
T05N R19E	03 Lot 03	39.34
T05N R19E	03 Lot 04	39.39
T05N R19E	03 S½N½	160.00
T05N R19E	03 S½	320.00
T05N R19E	04 Lot 01	39.41
T05N R19E	04 Lot 02	39.38
T05N R19E	04 S½NE¼	80.00
T05N R19E	07 Lot 03	38.00
T05N R19E	07 Lot 04	38.00
T05N R19E	07 E½SW¼	80.00
T05N R19E	07 SE¼	160.00
T05N R19E	08 SE¼	160.00
T05N R19E	09 NW¼SE¼	40.00
T05N R19E	18 NE¼	160.00
T05N R19E	18 E½NW¼	80.00
T05N R19E	18 N½SE¼	80.00
T05N R19E	24 E½NW¼	80.00
T05N R19E	24 N½NE¼	80.00
T05N R19E	24 N½SW¼	80.00
T05N R20E	05 Lot 1	39.23
T05N R20E	05 Lot 2	39.30
T05N R20E	05 Lot 3	39.37
T05N R20E	05 NW¼SW¼	40.00
T05N R20E	05 S½N½	160.00
T05N R20E	09 N½	320.00
T05N R20E	18 E½W½	160.00
T05N R20E	18 Lot 1	39.42
T05N R20E	18 Lot 2	39.46
T05N R20E	18 Lot 3	39.50
T05N R20E	18 Lot 4	39.54
T05N R20E	18 NE¼	160.00
T05N R20E	18 W½SE¼	80.00
T05N R20E	19 Lot 1	39.56
T05N R20E	19 NE¼NW¼	40.00
T05N R21E	13 SE¼SE¼	40.00
T05N R21E	23 NW¼NE¼	40.00
T05N R21E	23 N½SE¼	80.00
T05N R21E	23 SW¼SE¼	40.00
T05N R21E	25 SW¼NW¼	40.00
T05N R21E	25 W½SW¼	80.00
T05N R21E	26 S½	320.00
T05N R21E	27 S½S½	160.00
T06N R18E	03 Lot 3	42.27
T06N R18E	03 Lot 4	42.31
T06N R18E	03 SW¼	160.00
T06N R18E	03 S½NW¼	80.00
T06N R18E	09 SE¼NW¼	40.00
T06N R18E	10 NE¼	160.00
T06N R18E	11 N½N½	160.00
T06N R18E	12 SW¼NE¼	40.00
T06N R18E	12 SW¼SE¼	40.00
T06N R18E	12 W½NW¼	80.00
T06N R18E	15 SE¼NE¼	40.00
T06N R18E	24 S½	320.00
T06N R18E	24 S½N½	160.00
T06N R19E	01 S½S½	160.00
T06N R19E	04 S½S½	160.00
T06N R19E	09 N½	320.00
T06N R19E	12 N½SW¼	80.00
T06N R19E	15 SE¼SW¼	40.00
T06N R19E	17 NE¼NE¼	40.00
T06N R19E	17 W½E½	160.00
T06N R19E	17 W½	320.00
T06N R19E	17 SE¼SE¼	40.00
T06N R19E	18 Lot 1	37.80
T06N R19E	18 Lot 2	37.98
T06N R19E	18 Lot 3	37.66
T06N R19E	18 Lot 4	37.69
T06N R19E	18 E½	320.00
T06N R19E	18 E½W½	160.00
T06N R19E	21 E½NE¼	80.00
T06N R19E	21 NW¼NE¼	40.00
T06N R19E	21 W½SW¼	80.00
T06N R19E	27 NE¼	160.00
T06N R19E	27 N½SW¼	80.00
T06N R19E	27 SW¼SW¼	40.00
T06N R19E	28 N½	320.00
T06N R19E	28 E½SW¼	80.00
T06N R19E	28 NW¼NW¼	40.00
T06N R19E	29 All	640.00
T06N R19E	30 E½	320.00
T06N R19E	30 E½SW¼	80.00
T06N R19E	30 NE¼NW¼	40.00
T06N R19E	31 LOT 01	38.40
T06N R19E	31 LOT 02	38.00
T06N R19E	31 LOT 03	37.60
T06N R19E	31 LOT 04	37.20
T06N R20E	10 E½NE¼	80.00
T06N R20E	12 E½NW¼	80.00
T06N R20E	23 NE¼	160.00
T06N R20E	31 SW¼SE¼	40.00
T06N R22E	04 Lot 1	41.31
T06N R22E	04 Lot 2	41.29
T06N R22E	04 Lot 3	41.27
T06N R22E	04 Lot 4	41.25
T06N R22E	04 SE¼NE¼	40.00
T06N R22E	05 Lot 1	41.33
T06N R22E	05 Lot 3	41.69
T06N R22E	08 NE¼SE¼	40.00
T06N R22E	08 NE¼SW¼	40.00
T06N R22E	08 S½NW¼	80.00
T06N R22E	09 NW¼SW¼	40.00
T06N R22E	09 S½NW¼	80.00
T06N R23E	18 Lot 3	38.98
T06N R23E	18 Lot 4	38.86
T06N R23E	18 NE¼SW¼	40.00
T06N R23E	18 N½SE¼	80.00
T06N R23E	18 SE¼NW¼	40.00
T06N R23E	18 S½NE¼	80.00
T07N R18E	18 LOT 02	43.60
T07N R18E	18 NW¼SE¼	40.00
T07N R18E	18 SE¼NW¼	40.00
T07N R18E	18 SW¼NE¼	40.00
T07N R18E	20 E½E½	160.00
T07N R18E	20 E½W½	160.00
T07N R18E	20 NW¼SE¼	40.00
T07N R18E	20 SW¼SE¼	40.00
T07N R18E	21 SE¼SW¼	40.00
T07N R18E	22 S½NW¼	80.00
T07N R18E	30 LOT 04	42.27
T07N R18E	30 SE¼	160.00
T07N R18E	30 SE¼SW¼	40.00
T07N R19E	35 NE¼SE¼	40.00
T07N R19E	35 SE¼SW¼	40.00
T07N R19E	35 W½SW¼	80.00
T07N R22E	28 SE¼SW¼	40.00
T07N R22E	29 NW¼SW¼	40.00
T07N R22E	33 E½E½	160.00
T07N R22E	33 SW¼	160.00
T07N R22E	34 SW¼	160.00
T07N R22E	34 W½NW¼	80.00

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres
T07N R25E	24 SE¼	160.00
T07N R25E	35 SW¼	160.00
T07N R25E	35 W½SE¼	40.00
T07N R26E	30 Lot 01	36.45
TOTAL - Guadalupe County		14,019.63
LINCOLN COUNTY		
T01N R16E	08 SE¼NE¼	40.00
T01N R16E	21 NE¼SW¼	40.00
T01N R16E	21 SE¼	160.00
T01N R16E	21 S½SW¼	80.00
T01N R16E	22 NE¼SE¼	40.00
T01N R16E	22 N½	320.00
T01N R16E	22 SW¼	160.00
T01N R16E	22 S½SE¼	80.00
T01N R16E	23 ALL	640.00
T01N R16E	25 ALL	640.00
T01N R16E	26 ALL	640.00
T01N R17E	10 N½SW¼	80.00
T01N R17E	10 S½NW¼	80.00
T01N R17E	19 LOT 01	39.69
T01N R17E	19 LOT 02	39.83
T01N R17E	19 LOT 03	39.96
T01N R17E	19 LOT 04	39.13
T01N R17E	19 E½NW¼	80.00
T01N R17E	19 E½SW¼	80.00
T01N R17E	19 NE¼	160.00
T01N R17E	19 SE¼	160.00
T01N R17E	20 E½	320.00
T01N R17E	20 N½NW¼	80.00
T01N R17E	20 SW¼	160.00
T01N R17E	20 SW¼NW¼	40.00
T01N R17E	23 NE¼	160.00
T01N R17E	23 N½SE¼	80.00
T01N R17E	23 SE¼NW¼	40.00
T01N R17E	23 SW¼	160.00
T01N R17E	23 W½NW¼	80.00
T01N R17E	29 ALL	640.00
T01N R17E	30 LOT 01	40.16
T01N R17E	30 LOT 02	40.06
T01N R17E	30 LOT 03	39.95
T01N R17E	30 LOT 04	39.85
T01N R17E	30 E½	320.00
T01N R17E	30 E½W½	160.00
T01N R19E	04 SE¼SW¼	40.00
T01N R19E	06 LOT 03	39.85
T01N R19E	06 NW¼SE¼	40.00
T01N R19E	06 SW¼NE¼	40.00
T01N R19E	09 W½SW¼	80.00
T01N R19E	23 NE¼NW¼	40.00
T01N R19E	23 NW¼SE¼	40.00
T01N R19E	23 SW¼NE¼	40.00
T01N R19E	26 NE¼NW¼	40.00
T01N R19E	31 LOT 04	40.04
T01N R19E	31 SE¼SW¼	40.00
T01N R19E	31 S½SE¼	80.00
T01N R19E	33 SW¼SW¼	40.00
T01N R19E	35 SW¼SE¼	40.00
T01S R13E	26 W½SW¼	80.00
T01S R14E	09 NW¼SE¼	40.00
T01S R14E	14 NW¼NW¼	40.00
T01S R14E	20 S½NW¼	80.00
T01S R14E	24 NE¼NE¼	40.00
T01S R14E	24 S½SW¼	80.00
T01S R14E	30 LOT 01	40.30
T01S R14E	30 LOT 02	40.27
T01S R17E	05 LOT 04	35.90
T01S R17E	05 SW¼NW¼	40.00
T01S R17E	35 E½SE¼	80.00
T01S R18E	05 LOT 01	31.75
T01S R18E	05 LOT 02	32.05
T01S R18E	05 LOT 03	32.35
T01S R18E	05 LOT 04	32.65
T01S R18E	05 S½	320.00
T01S R18E	05 S½N½	160.00
T01S R18E	06 SE¼	160.00
T01S R18E	13 W½SW¼	80.00
T01S R18E	14 E½SE¼	80.00
T01S R18E	17 ALL	640.00
T01S R18E	18 LOT 01	48.39
T01S R18E	18 LOT 02	48.37
T01S R18E	18 LOT 03	48.35
T01S R18E	18 LOT 04	48.33
T01S R18E	18 E½	320.00
T01S R18E	18 E½W½	160.00
T01S R18E	19 SE¼SW¼	40.00
T01S R18E	20 E½SW¼	80.00
T01S R18E	20 N½	320.00
T01S R18E	20 SE¼	160.00
T01S R18E	21 NE¼	160.00
T01S R18E	21 NW¼NW¼	40.00
T01S R18E	21 S½	320.00
T01S R18E	21 S½NW¼	80.00
T01S R19E	07 LOT 03	44.75
T01S R19E	15 NE¼NE¼	40.00
T01S R19E	15 NW¼	160.00
T01S R19E	15 W½NE¼	80.00
T01S R19E	18 E½NW¼	80.00
T01S R19E	18 NE¼	160.00
T01S R19E	30 W½NE¼	80.00
T02S R10E	12 E½SW¼	80.00
T02S R10E	13 SE¼NW¼	40.00
T02S R10E	34 NE¼NE¼	40.00
T02S R10E	34 NW¼	160.00
T02S R10E	34 N½SW¼	80.00
T02S R10E	34 SW¼SW¼	40.00
T02S R10E	35 NE¼	160.00
T02S R11E	28 S½	320.00
T02S R12E	02 NW¼SW¼	40.00
T02S R12E	10 NE¼SE¼	40.00
T02S R15E	13 SE¼NE¼	40.00
T02S R15E	13 W½SE¼	80.00
T02S R15E	13 S½SW¼	80.00
T02S R15E	17 SW¼SW¼	40.00
T02S R15E	18 S½SE¼	80.00
T02S R15E	21 SW¼SW¼	40.00
T02S R15E	24 NW¼SW¼	40.00
T02S R15E	25 NE¼NW¼	40.00
T02S R15E	25 SW¼	160.00
T02S R15E	25 S½NW¼	80.00
T02S R15E	26 E½SE¼	80.00
T02S R16E	09 N½	320.00
T02S R16E	19 E½E½	160.00
T02S R16E	19 SW¼NE¼	40.00
T02S R16E	31 LOT 01	37.28
T02S R16E	31 LOT 02	37.20
T02S R16E	31 LOT 03	37.12
T02S R16E	31 LOT 04	37.04
T02S R16E	31 E½SW¼	80.00
T02S R16E	31 SE¼	160.00
T02S R18E	01 SW¼SW¼	40.00
T02S R18E	11 NW¼SE¼	40.00
T02S R18E	11 W½NE¼	80.00
T03S R10E	17 ALL	640.00
T03S R10E	18 LOT 01	31.19
T03S R10E	18 LOT 02	31.71
T03S R10E	18 LOT 03	31.23
T03S R10E	18 LOT 04	31.75
T03S R10E	18 E½	320.00
T03S R10E	18 E½W½	160.00
T03S R10E	24 LOT 01	44.28
T03S R10E	24 LOT 02	43.89
T03S R10E	24 NW¼	160.00
T03S R10E	24 W½NE¼	80.00
T03S R10E	33 E½	320.00
T03S R11E	24 NW¼SW¼	40.00
T03S R11E	26 NW¼SW¼	40.00
T03S R11E	26 W½NE¼	80.00
T03S R11E	27 N½SE¼	80.00
T03S R11E	27 SW¼SE¼	40.00
T03S R11E	33 NE¼SW¼	40.00
T03S R11E	33 N½SE¼	80.00
T03S R11E	33 SE¼SE¼	40.00
T03S R12E	24 NE¼NW¼	40.00
T03S R12E	24 NW¼NE¼	40.00
T03S R13E	18 LOT 01	41.81
T03S R13E	18 LOT 02	41.92
T03S R13E	18 E½NW¼	80.00
T03S R13E	18 NE¼SW¼	40.00
T03S R13E	18 N½SE¼	80.00
T03S R13E	23 N½NW¼	80.00
T03S R13E	23 SE¼NW¼	40.00
T03S R13E	25 ALL	640.00
T03S R13E	29 NE¼NW¼	40.00
T03S R13E	29 NW¼NE¼	40.00
T03S R13E	30 SW¼NE¼	40.00
T03S R15E	03 LOT 01	40.27
T03S R15E	03 LOT 02	40.26
T03S R15E	03 S½NE¼	80.00
T03S R15E	19 SE¼NE¼	40.00
T03S R15E	20 N½SW¼	80.00
T03S R15E	23 NE¼NE¼	40.00
T03S R15E	23 SE¼SE¼	40.00
T03S R15E	26 S½	320.00
T03S R15E	27 NW¼SE¼	40.00

TABLE A10-1 (continued)

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres	Township/Range	Sec.	Acres	Township/Range	Sec.	Acres
T03S R15E	33 W½SW¼	80.00	T04S R18E	21 W½E½	160.00	T06S R10E	03 LOT 02	37.98
T03S R15E	34 N½SE¼	80.00	T05S R10E	01 S½SE¼	80.00	T06S R10E	03 LOT 03	38.01
T03S R15E	34 SE¼NW¼	40.00	T05S R10E	05 SE¼SW¼	40.00	T06S R10E	03 LOT 04	38.03
T03S R15E	34 S½NE¼	80.00	T05S R10E	08 NW¼NW¼	40.00	T06S R10E	03 LOT 07	40.00
T03S R17E	11 E½NW¼	80.00	T05S R10E	09 S½SW¼	80.00	T06S R10E	03 LOT 08	40.00
T03S R17E	33 W½NW¼	80.00	T05S R10E	12 N½	320.00	T06S R10E	03 NW¼SW¼	40.00
T03S R18E	10 SE¼	160.00	T05S R10E	12 N½S½	160.00	T06S R10E	03 SE¼SE¼	40.00
T03S R18E	15 NE¼SE¼	40.00	T05S R10E	33 E½	320.00	T06S R10E	11 NE¼	160.00
T03S R18E	15 SE¼NE¼	40.00	T05S R11E	03 SE¼SW¼	40.00	T06S R10E	12 N½	320.00
T04S R11E	01 Lot 1	36.53	T05S R11E	07 LOT 03	34.15	T06S R10E	14 W½SW¼	80.00
T04S R11E	01 Lot 2	36.73	T05S R11E	19 SE¼SE¼	40.00	T06S R10E	15 E½NE¼	80.00
T04S R11E	01 Lot 3	36.91	T05S R13E	09 W½SE¼	80.00	T06S R10E	23 W½	320.00
T04S R11E	01 Lot 4	37.11	T05S R13E	13 NE¼	160.00	T06S R10E	26 NW¼	160.00
T04S R11E	01 S½NW¼	80.00	T05S R13E	31 NE¼SE¼	40.00	T06S R11E	07 LOT 03	39.69
T04S R11E	04 LOT 01	39.56	T05S R13E	31 SE¼NE¼	40.00	T06S R11E	08 SW¼SW¼	40.00
T04S R11E	04 SE¼NE¼	40.00	T05S R14E	03 SE¼	160.00	T06S R11E	25 LOT 24	20.34
T04S R11E	20 S½	320.00	T05S R14E	06 SE¼SW¼	40.00	T06S R11E	25 LOT 44	8.99
T04S R11E	21 NE¼	160.00	T05S R14E	10 NE¼	160.00	T06S R12E	25 LOT 01	39.99
T04S R11E	21 N½SE¼	80.00	T05S R14E	10 S½	320.00	T06S R12E	36 NE¼SW¼	40.00
T04S R11E	21 SE¼NW¼	40.00	T05S R14E	19 SE¼NE¼	40.00	T06S R13E	01 LOT 01	18.81
T04S R11E	21 SW¼	160.00	T05S R14E	19 SW¼	160.00	T06S R13E	01 LOT 02	19.15
T04S R11E	22 N½	320.00	T05S R14E	25 LOT 02	44.84	T06S R13E	30 LOT 03	42.22
T04S R11E	23 N½NW¼	80.00	T05S R14E	25 LOT 04	45.40	T06S R14E	01 LOT 01	19.00
T04S R11E	28 NW¼	160.00	T05S R15E	04 LOT 01	39.46	T06S R14E	01 LOT 02	18.98
T04S R11E	33 W½SW¼	80.00	T05S R15E	20 NW¼SE¼	40.00	T06S R14E	01 LOT 03	18.98
T04S R12E	01 NW¼SE¼	40.00	T05S R15E	20 SW¼NE¼	40.00	T06S R14E	01 LOT 04	18.98
T04S R12E	01 N½SW¼	80.00	T05S R15E	25 SW¼NE¼	40.00	T06S R14E	06 LOT 04	18.62
T04S R12E	13 SE¼	160.00	T05S R15E	28 N½SW¼	80.00	T06S R14E	27 SW¼SW¼	40.00
T04S R12E	17		T05S R15E	28 SE¼SW¼	40.00	T06S R15E	06 LOT 03	59.10
E½SE¼SW¼SW¼		5.00	T05S R15E	29 NE¼SE¼	40.00	T06S R15E	21 N½NE¼	80.00
T04S R12E	17 SE¼SW¼	40.00	T05S R15E	30 E½SE¼	80.00	T06S R15E	28 SW¼NW¼	40.00
T04S R12E	19		T05S R15E	33 NE¼NW¼	40.00	T06S R16E	01 LOT 01	14.43
NW¼SW¼NE¼		10.00	T05S R15E	33 NE¼SW¼	40.00	T06S R16E	01 LOT 08	40.00
T04S R12E	19 S½SE¼NE¼	20.00	T05S R15E	33 SW¼NE¼	40.00	T06S R17E	04 LOT 04	29.55
T04S R12E	19		T05S R16E	11 N½SW¼	80.00	T06S R17E	04 SE¼SW¼	40.00
W½NE¼SW¼NE¼		5.00	T05S R16E	17 SE¼	160.00	T06S R17E	06 LOT 12	44.88
T04S R12E	20		T05S R16E	17 SE¼SW¼	40.00	T06S R17E	06 LOT 13	44.88
E½NE¼SW¼NW¼		5.00	T05S R16E	17 S½NE¼NE¼	20.00	T06S R17E	06 LOT 14	44.88
T04S R12E	20 E½NW¼	80.00	T05S R16E	24 E½NE¼	80.00	T06S R17E	29 E½SE¼	80.00
T04S R12E	20		T05S R16E	24 NW¼SW¼	40.00	T06S R17E	29 SE¼NE¼	40.00
E½NW¼NW¼		10.00	T05S R16E	24 SW¼NE¼	40.00	T06S R18E	10 NE¼NW¼	40.00
T04S R12E	20		T05S R16E	28 S½SW¼	80.00	T06S R18E	20 SW¼NE¼	40.00
S½SW¼NW¼		20.00	T05S R16E	31 S½SE¼	80.00	T06S R18E	21 E½	320.00
T04S R12E	29 NE¼SE¼	40.00	T05S R19E	26 NW¼	160.00	T06S R18E	21 E½W½	160.00
T04S R12E	32 NE¼NE¼	40.00	T05S R19E	27 NW¼SW¼	40.00	T06S R18E	21 NW¼NW¼	40.00
T04S R13E	24 S½	320.00	T05S R19E	27 SW¼NW¼	40.00	T06S R18E	23 S½NW¼	80.00
T04S R13E	24 W½NW¼	80.00	T05S R19E	28 NE¼SE¼	40.00	T06S R18E	28 E½NE¼	80.00
T04S R13E	26 SE¼SW¼	40.00	T05S R19E	28 SE¼NE¼	40.00	T06S R18E	28 NE¼SE¼	40.00
T04S R13E	26 S½SE¼	80.00	T05S R19E	34 SW¼NW¼	40.00	T06S R18E	28 NW¼NE¼	40.00
T04S R13E	34 SW¼NW¼	40.00	T05S R19E	34 W½SW¼	80.00	T06S R18E	29 SW¼SE¼	40.00
T04S R14E	08 SW¼NE¼	40.00	T06S R09E	11 E½SW¼	80.00	T06S R19E	20 NW¼NW¼	40.00
T04S R14E	22 S½NW¼	80.00	T06S R09E	27 SE¼NW¼	40.00	T06S R19E	29 S½SW¼	80.00
T04S R15E	01 LOT 04	40.09	T06S R09E	27 SE¼SW¼	40.00	T06S R20E	03 SW¼	160.00
T04S R15E	01 SW¼NW¼	40.00	T06S R09E	28 NE¼NE¼	40.00	T06S R20E	04 LOT 02	29.65
T04S R15E	01 W½SW¼	80.00	T06S R09E	28 N½SW¼	80.00	T06S R20E	04 LOT 04	29.99
T04S R15E	06 LOT 09	47.26	T06S R09E	28 SE¼SE¼	40.00	T06S R20E	04 W½SE¼	80.00
T04S R15E	30 NE¼SW¼	40.00	T06S R09E	28 S½NW¼	80.00	T06S R20E	04 W½SW¼	80.00
T04S R16E	07 SW¼SE¼	40.00	T06S R10E	01 S½S½	160.00	T06S R20E	17 SW¼SW¼	40.00
T04S R18E	21 NE¼SW¼	40.00	T06S R10E	03 LOT 01	37.95	T06S R20E	18 LOT 04	44.72

TABLE A10-1 (continued)

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres
T06S R20E	18 SE¼SE¼	40.00
T07S R09E	01 N½NW¼	80.00
T07S R11E	05 LOT 01	39.91
T07S R14E	14 SE¼NE¼	40.00
T07S R14E	15 NE¼NW¼	40.00
T07S R14E	17 W½NE¼	80.00
T07S R17E	08 SW¼NW¼	40.00
T07S R18E	12 E½NW¼	80.00
T07S R18E	12 N½SW¼	80.00
T07S R18E	12 SW¼SW¼	40.00
T07S R18E	18 SE¼NW¼	40.00
T07S R18E	18 SW¼NE¼	40.00
T07S R18E	20 W½NE¼	80.00
T07S R18E	21 SE¼SW¼	40.00
T07S R18E	25 NW¼SE¼	40.00
T07S R19E	31 LOT 05	44.04
T07S R19E	31 LOT 06	44.44
T07S R19E	31 SW¼SE¼	40.00
T07S R19E	35 S½SW¼	80.00
T07S R20E	18 SW¼NE¼	40.00
T07S R20E	21 SE¼SE¼	40.00
T07S R20E	22 SW¼SW¼	40.00
T07S R20E	27 NW¼NW¼	40.00
T07S R20E	28 NE¼NE¼	40.00
T07S R20E	28 NE¼NW¼	40.00
T07S R20E	28 SW¼	160.00
T07S R20E	28 SW¼NE¼	40.00
T07S R20E	28 W½NW¼	80.00
T07S R20E	28 W½SE¼	80.00
T07S R20E	34 N½SW¼	80.00
T07S R20E	34 S½NW¼	80.00
T07S R20E	34 S½S½	160.00
T07S R20E	34 S½S½	160.00
T08S R13E	32 NE¼NW¼	40.00
T08S R15E	27 NW¼SW¼	40.00
T08S R19E	03 LOT 01	39.91
T08S R19E	03 E½SE¼	80.00
T08S R19E	03 SE¼NE¼	40.00
T08S R19E	05 N½SW¼	80.00
T08S R19E	07 NE¼NW¼	40.00
T08S R19E	10 E½NW¼	80.00
T08S R19E	10 SW¼NW¼	40.00
T08S R19E	18 LOT 01	47.46
T08S R19E	18 NE¼NW¼	40.00
T08S R19E	18 NW¼NE¼	40.00
T08S R19E	18 SE¼SW¼	40.00
T08S R19E	20 N½NE¼	80.00
T08S R19E	31 LOT 01	46.43
T08S R20E	06 LOT 01	40.15
T08S R20E	06 LOT 02	40.10
T08S R20E	06 LOT 03	40.06
T08S R20E	06 LOT 04	43.48
T08S R20E	06 SE¼NW¼	40.00
T08S R20E	06 S½NE¼	80.00
T09S R08E	34 W½NE¼	80.00
T09S R09E	19 LOT 01	39.21
T09S R09E	19 LOT 02	39.24
T09S R09E	19 LOT 03	39.27
T09S R09E	19 E½	320.00
T09S R09E	19 E½NW¼	80.00
T09S R09E	19 NE¼SW¼	40.00
T09S R09E	20 SW¼	160.00
T09S R09E	20 W½SE¼	80.00
T09S R09E	22 LOT 01	38.15
T09S R09E	22 LOT 02	38.14
T09S R09E	22 LOT 03	37.96
T09S R09E	22 LOT 04	37.21
T09S R09E	22 LOT 05	34.92
T09S R09E	22 LOT 06	36.71
T09S R09E	22 LOT 07	37.42
T09S R09E	22 LOT 08	37.52
T09S R09E	22 LOT 09	36.91
T09S R09E	22 LOT 10	36.68
T09S R09E	22 LOT 11	36.23
T09S R09E	27 LOT 01	34.46
T09S R09E	27 LOT 02	35.04
T09S R09E	28 S½NE¼	80.00
T09S R09E	29 NW¼NE¼	40.00
T09S R09E	29 W½	320.00
T09S R09E	30 E½NW¼	80.00
T09S R09E	30 NE¼	160.00
T09S R09E	30 NE¼SE¼	40.00
T09S R15E	25 S½NW¼	80.00
T09S R19E	05 SE¼SE¼	40.00
T09S R19E	05 S½SW¼	80.00
T09S R19E	08 N½	320.00
T09S R19E	08 SW¼	160.00
T09S R19E	18 NE¼	160.00
T09S R19E	19 NE¼NW¼	40.00
T09S R20E	25 NE¼SE¼	40.00
T10S R09E	01 LOT 01	37.43
T10S R09E	03 LOT 01	39.15
T10S R09E	03 LOT 02	39.20
T10S R09E	03 LOT 03	39.26
T10S R09E	03 LOT 04	39.31
T10S R09E	03 E½SW¼	80.00
T10S R09E	03 SE¼	160.00
T10S R09E	03 SE¼NW¼	40.00
T10S R09E	03 S½NE¼	80.00
T10S R09E	04 NE¼SW¼	40.00
T10S R09E	04 S½SE¼	80.00
T10S R09E	06 SE¼	160.00
T10S R09E	09 NE¼SW¼	40.00
T10S R09E	09 SE¼	160.00
T10S R09E	09 S½N½	160.00
T10S R09E	09 S½SW¼	80.00
T10S R09E	10 NW¼	160.00
T10S R09E	10 NW¼SW¼	40.00
T10S R09E	10 S½S½	160.00
T10S R09E	10 W½NE¼	80.00
T10S R09E	15 N½	320.00
T10S R09E	15 SW¼	160.00
T10S R09E	15 S½SE¼	80.00
T10S R09E	22 NE¼NW¼	40.00
T10S R09E	22 N½NE¼	80.00
T10S R09E	22 N½S½	160.00
T10S R09E	22 SW¼NE¼	40.00
T10S R09E	22 S½NW¼	80.00
T10S R09E	22 S½SE¼	80.00
T10S R17E	24 SW¼SW¼	40.00
T10S R18E	01 NE¼SE¼	40.00
T10S R18E	01 SE¼NE¼	40.00
T10S R18E	04 LOT 03	40.43
T10S R18E	04 LOT 04	40.54
T10S R18E	05 SE¼NE¼	40.00
T10S R18E	10 NE¼NW¼	40.00
T10S R18E	10 N½NE¼	80.00
T10S R18E	11 N½N½	160.00
T10S R18E	22 NW¼SW¼	40.00
T10S R18E	22 N½SE¼	80.00
T10S R18E	22 SW¼SE¼	40.00
T10S R18E	26 NW¼	160.00
T10S R18E	27 SE¼NE¼	40.00
T10S R19E	01 E½SW¼	80.00
T10S R19E	01 NW¼SE¼	40.00
T10S R19E	01 SE¼NW¼	40.00
T10S R19E	01 SW¼NE¼	40.00
T10S R19E	03 SW¼	160.00
T10S R19E	03 S½SE¼	80.00
T10S R19E	04 LOT 03	40.48
T10S R19E	04 S½SE¼	80.00
T10S R19E	06 E½SW¼	80.00
T10S R19E	06 Lot 5	45.57
T10S R19E	06 Lot 6	45.62
T10S R19E	06 SE¼	160.00
T10S R19E	08 E½E½	160.00
T10S R19E	08 NW¼SE¼	40.00
T10S R19E	08 NW¼SW¼	40.00
T10S R19E	08 W½NW¼	80.00
T10S R19E	10 NW¼	160.00
T10S R19E	13 E½SE¼	80.00
T10S R19E	24 S½N½	160.00
T10S R19E	25 N½	320.00
T10S R20E	09 NE¼	160.00
T10S R20E	09 SE¼SW¼	40.00
T10S R20E	09 S½SE¼	80.00
T10S R20E	15 SE¼NW¼	40.00
T10S R20E	18 E½SW¼	80.00
T10S R20E	18 SE¼NW¼	40.00
T10S R20E	18 SW¼NE¼	40.00
T10S R20E	18 W½SE¼	80.00
T10S R20E	19 E½SW¼	80.00
T10S R20E	19 Lot 1	40.70
T10S R20E	19 Lot 3	40.64
T10S R20E	19 Lot 4	40.61
T10S R20E	19 NE¼NW¼	40.00
T10S R20E	19 N½NE¼	80.00
T10S R20E	19 SE¼	160.00
T10S R20E	21 E½NW¼	80.00
T10S R20E	21 NE¼SW¼	40.00
T10S R20E	21 NW¼SE¼	40.00
T10S R20E	30 SE¼NE¼	40.00
T10S R20E	31 E½NE¼	80.00
T10S R20E	33 SE¼NW¼	40.00
T10S R20E	35 N½S½	160.00
T10S R20E	35 S½N½	160.00
T11S R18E	03 SW¼SW¼	40.00

TABLE A10-1 (continued)

PUBLIC LANDS IDENTIFIED FOR DISPOSAL

Township/Range	Sec.	Acres
T11S R18E	09 NE¼SE¼	40.00
T11S R18E	10 NW¼NW¼	40.00
T11S R18E	11 NE¼	160.00
T11S R18E	11 SW¼NW¼	40.00
T11S R18E	11 W½SW¼	80.00
T11S R18E	14 NW¼NE¼	40.00
T11S R18E	14 N½NW¼	80.00
T11S R19E	14 LOT 05	41.03
T11S R19E	15 NE¼SE¼SE¼	10.00
T11S R19E	22 SE¼NW¼NE¼	10.00
T11S R20E	28 LOT 01	42.15
T12S R19E	01 LOT 01	2.17
T12S R19E	01 LOT 02	5.27
T12S R19E	03 LOT 05	10.43
T12S R19E	03 LOT 06	13.00
T12S R19E	04 LOT 07	30.15
T12S R19E	07 LOT 05	38.97
T12S R19E	07 LOT 06	33.71
T12S R19E	07 LOT 07	29.58
T12S R19E	09 NE¼SW¼	40.00
T12S R19E	10 LOT 01	10.33
T12S R19E	10 LOT 02	10.40
T12S R19E	20 LOT 01	37.99
T12S R20E	22 Lot 1	41.57
T12S R20E	22 Lot 4	36.45
T12S R20E	22 Lot 6	40.71
T12S R20E	22 LOT 07	34.64
T12S R20E	22 NE¼NW¼	40.00
T12S R20E	23 W½NW¼	80.00
T12S R20E	27 LOT 01	39.87
T12S R20E	27 LOT 02	35.30
T12S R20E	27 LOT 04	37.78
T12S R20E	34 Lot 01	39.11
T12S R20E	34 Lot 02	40.74
T12S R20E	34 NW¼NE¼	40.00
T13S R19E	21 NE¼NW¼	40.00
T13S R19E	24 N½S½	160.00
T13S R19E	24 W½NW¼	80.00
T13S R19E	25 NE¼SE¼	40.00
T13S R19E	25 NE¼SW¼	40.00
T13S R19E	25 SE¼NE¼	40.00
T13S R19E	25 SE¼NW¼	40.00
T13S R20E	03 Lot 05	24.97
T13S R20E	03 W½SW¼	80.00
T13S R20E	17 LOT 03	26.40
T13S R20E	17 LOT 04	33.04
T13S R20E	17 N½S½	160.00
T13S R20E	17 SE¼NE¼	40.00
T13S R20E	17 S½SE¼	80.00
T13S R20E	18 LOT 05	38.65
T13S R20E	18 LOT 06	32.89
T13S R20E	18 LOT 07	39.35
T13S R20E	18 NE¼SE¼	40.00
T13S R20E	18 S½SE¼	80.00
T13S R20E	19 LOT 05	40.91
T13S R20E	19 LOT 06	17.96
T13S R20E	19 LOT 08	22.33
T13S R20E	19 LOT 09	22.31
T13S R20E	19 LOT 12	22.29
T13S R20E	24 SE¼SW¼	40.00
T13S R20E	25 NW¼NE¼	40.00
T13S R20E	25 N½SE¼	80.00
T13S R20E	25 SE¼NE¼	40.00
T13S R20E	25 SE¼NW¼	40.00
T13S R20E	25 SW¼SW¼	40.00
T13S R20E	26 SW¼NE¼	40.00
T13S R20E	30 LOT 05	22.29
T13S R20E	30 LOT 07	22.13
T13S R20E	30 LOT 08	22.31
T13S R20E	30 LOT 09	53.31
T13S R20E	31 N½NE¼SE¼	20.00
TOTAL - Lincoln County		**47,482.25**

ROOSEVELT COUNTY

Township/Range	Sec.	Acres
T07S R32E	22 S½NE¼	80.00
T07S R32E	23 E½NE¼	80.00
T07S R32E	24 NW¼	160.00
T07S R32E	27 E½SW¼	80.00
T07S R32E	27 NW¼SE¼	40.00
T07S R32E	28 NW¼SE¼	40.00
T07S R32E	33 SE¼NE¼	40.00
T07S R32E	34 NW¼NW¼	40.00
T07S R32E	34 S½NW¼	80.00
T07S R32E	35 S½NW¼	80.00
T07S R33E	18 SE¼	160.00
T07S R33E	19 LOT 01	37.71
T07S R33E	19 LOT 02	37.77
T07S R33E	19 LOT 03	37.83
T07S R33E	19 LOT 04	37.89
T07S R33E	19 E½	320.00
T07S R33E	19 E½W½	160.00
T07S R33E	20 N½	320.00
T07S R33E	22 W½	320.00
T07S R33E	27 NE¼	160.00
T07S R33E	27 S½	320.00
T07S R33E	28 SE¼	160.00
T07S R33E	29 SE¼	160.00
T07S R34E	10 E½SW¼	80.00
T07S R34E	15 SW¼NE¼	40.00
T07S R34E	15 NE¼NW¼	40.00
T07S R34E	15 NW¼SE¼	40.00
TOTAL - Roosevelt County		**3,151.20**

ACREAGE SUMMARY

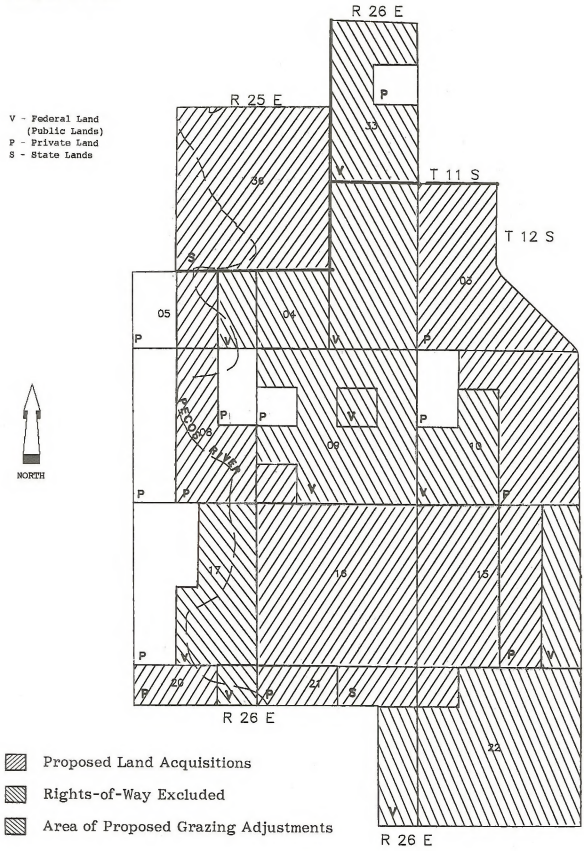
Chaves County	33,343.50
DeBaca County	12,327.82
Guadalupe County	14,019.63
Lincoln County	47,482.25
Roosevelt County	3,151.20
GRAND TOTAL	**110,324.40**

APPENDIX 14
ACEC MAPS

This appendix contains ACEC-specific maps that show the proposed management for each ACEC. The area shown on each map comprises the proposed ACEC. Maps are not provided for the caves in the Roswell Cave Complex ACEC because of the sensitive nature of the caves and their locations.

ACEC	MAP	TOPIC
Overflow Wetlands	A14-1	Proposed Land Acquisitions Rights-of-Way Exclusions Area of Proposed Grazing Adjustments
	A14-2	No Surface Occupancy Areas Mineral Disposal Closures Off-Highway Vehicle Use Designations
North Pecos River	A14-3	Oil and Gas Leasing Restrictions
	A14-4	Mineral Estate by Ownership Mineral Disposal Closures
	A14-5	Proposed Land Acquisitions Rights-of-Way Avoidance Areas Off-Highway Vehicle Use Designations Livestock Grazing Adjustments
Mescalero Sands	A14-6	Rights-of-Way Exclusion Areas Mineral Disposal and Leasing Closures Proposed Land Acquisitions Livestock Grazing Adjustments Off-Highway Vehicle Use Designations
Fort Stanton	A14-7	Mineral Disposal and Leasing Closures Livestock Grazing Off-Highway Vehicle Use Designations Rights-of-Way Exclusion Areas

Proposed Plan



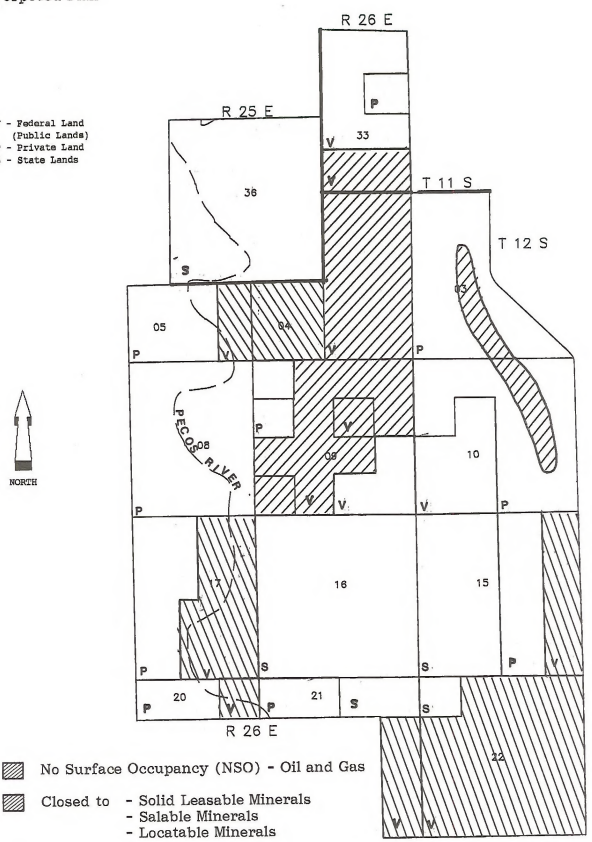
SCALE
1" = .6 Miles
BLM-Roswell District, 1994

MAP A14-1
OVERFLOW WETLANDS
Roswell Resource Area

AP14-2

Porposed Plan

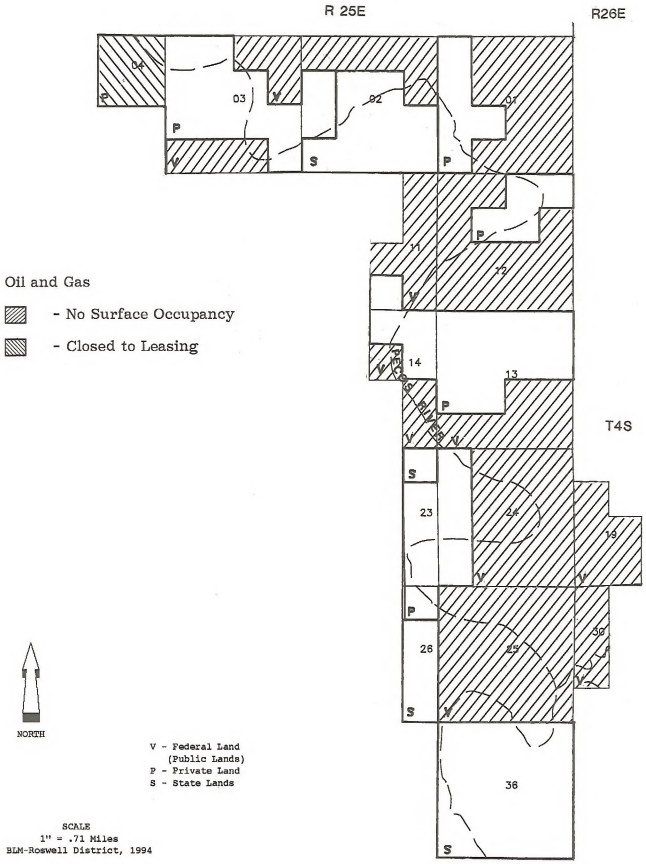
V - Federal Land
(Public Lands)
P - Private Land
S - State Lands



SCALE
1" = .6 Miles
BLM-Roswell District, 1994

MAP A14-2
OVERFLOW WETLANDS
Roswell Resource Area

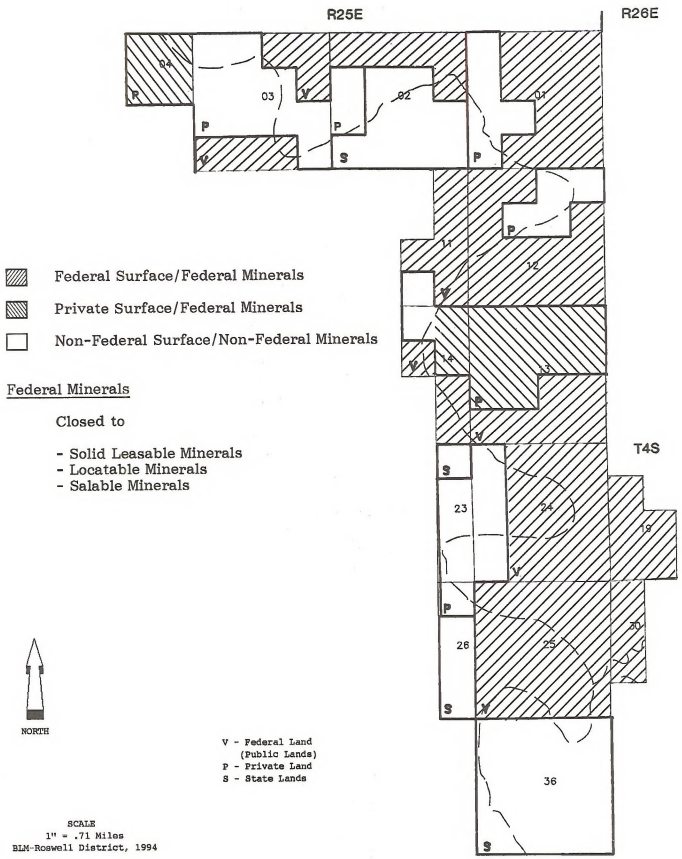
Proposed Plan



MAP A14-3

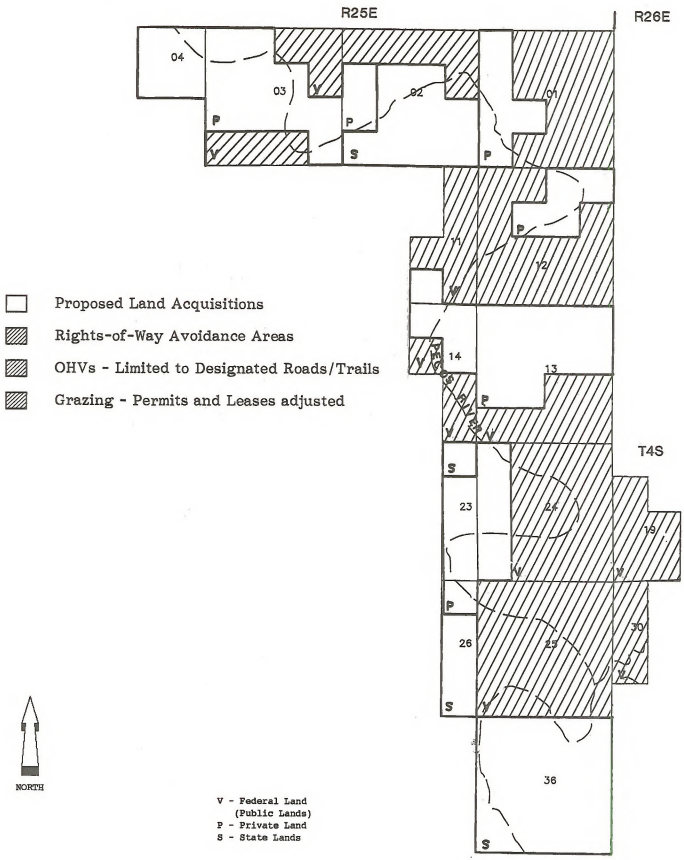
NORTH PECOS RIVER

Roswell Resource Area



MAP A14-4
NORTH PECOS RIVER
Roswell Resource Area

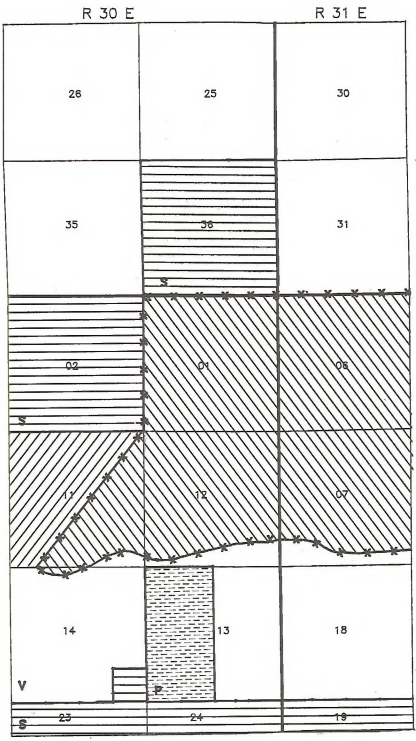
Proposed Plan



SCALE
1" = .71 Miles
BLM-Roswell District, 1994

MAP A14-5
NORTH PECOS RIVER
Roswell Resource Area

Proposed Plan



V - Federal Land (Public Lands)
P - Private Land
S - State Lands

ENTIRE AREA

Rights-of-Way - Excluded
Closed to - Solid Leasable Minerals
- Salable Minerals
- Locatable Minerals
- Oil and Gas Leasing

Proposed Acquisition - State Land

Proposed Acquisition - Private Land

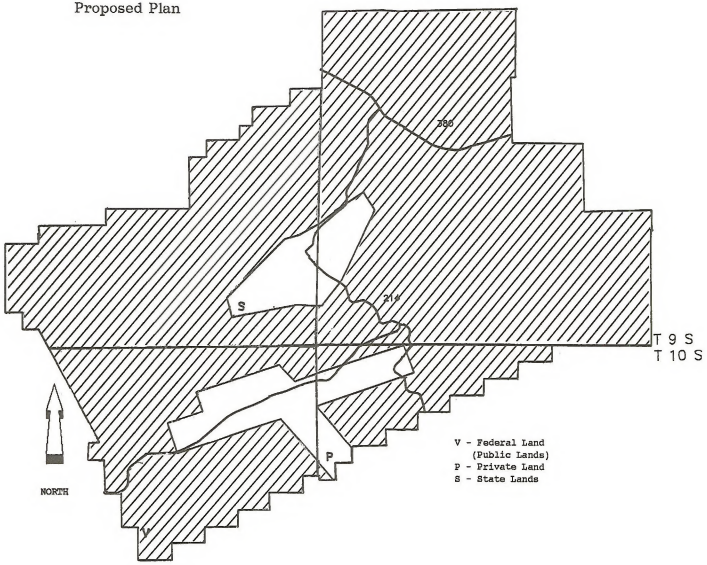
Grazing - Allowed but No Preference Allocated/OHVs - Closed

OHVs Closed

SCALE
1" = .71 Miles
BLM-Roswell District, 1994

MAP A14-6
MESCALERO SANDS
Roswell Resource Area

Proposed Plan



Entire Fort Stanton (Public Lands)

Closed to - Solid Leasable Minerals
- Locatable Minerals
- Oil and Gas Leasing

Open to - Salable Minerals

Grazing - Allowed

OHVs - Limited to Designated Roads/Trails

Rights-of-Way - Excluded

SCALE
1" = 1.42 Miles
BLM-Roswell District, 1994

MAP A14-7
FORT STANTON
Roswell Resource Area

APPENDIX 16
SPECIAL STATUS SPECIES
CARLSBAD RESOURCE AREA

This appendix lists the federally listed, state listed, and BLM sensitive plant and animal species potentially occurring in the Carlsbad Resource Area.

TABLE A16-1
FEDERALLY LISTED SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA

Common Name	Scientific Name	Status
Mammals		
Black-footed ferret	Mistela nigripes	FE
Swift fox	Vulpes velox velox	FC
Birds		
Bald eagle	Haliaeetus leucocephalus	FT
American peregrine falcon	Falco peregrinus	FE
Northern aplomado falcon	Falco femoralis	FE
Interior least tern	Sterna antillarum athalassos	FE
Mountain plover	Charadrius montanus	FC
Baird's sparrow	Ammodramus bairdii	FC
Southwestern willow flycatcher	Empidonax trailli extimus	FE
Mexican spotted owl	Strix occidentalis lucida	FT
Brown pelican	Pelecanus occidentalis	FE
Fish		
Pecos bluntnose shiner	Notropis simus peconsensis	FT
Pecos pupfish	Cyprinodon pecosensis	FC
Pecos gambusia	Gambusia nobilis	FE
Invertebrates		
Pecos assiminea snail	Assiminea pecos	FC
Plants		
Lee's pincushion cactus	Coryphantha sneedii var. leei	FT
Kuenzler's hedgehog cactus	Echinocereus fendleri var. kuenzleri	FE
Lloyd's hedgehog cactus	Echinocereus lloydii	FE
Gypsum wild buckwheat	Eriogonum gypsophilum	FT

Note: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate, Category 1.

Source: BLM files, 1996.

TABLE A16-2
STATE-LISTED SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE CARSLBAD RESOURCE AREA

Common Name	Scientific Name	Status
Mammals		
Guadalupe southern pocket gopher	Thomomys umbrinus guadalupensis	SE
Birds		
Bald eagle	Haliaeetus leucocephalus	ST
American peregrine falcon	Falco peregrinus	SE
Common black-hawk	Buteogallus anthracinus	ST
Northern aplomado falcon	Falco femoralis	SE
Interior least tern	Sterna antillarum athalassos	SE
Bell's vireo	Vireo bellii	ST
Gray vireo	Vireo vicinoir	ST
Varied bunting	Passerina versicolor	ST
Baird's sparrow	Ammodramus bairdii	ST
Southwestern willow flycatcher	Empidonax traillii extimus	ST
Mexican spotted owl	Strix occidentalis lucida	SE
Brown pelican	Pelecanus occidentalis	SE
Neotropic cormorant	Phalacrocorax brasilianus	ST
Common ground-dove	Columbina passerina	SE
Broad-billed hummingbird	Cynanthus latirostris	ST
Reptiles		
River cooter	Pseudemys concinna	ST
Blotched water snake	Nerodia erythrogaster	ST
Arid land ribbon snake	Thamnophis proximus	ST
Mottled rock rattlesnake	Crotalus lepidus lepidus	ST
Sand dune lizard	Sceloporus arenicolus	ST
Fish		
Pecos bluntnose shiner	Notropis simus pecosensis	ST
Pecos gambusia	Gambusia nobilis	ST
Pecos pupfish	Cyprinodon pecosensis	ST
Greenthroat darter	Etheostoma lepidum	ST
Bigscale logperch	Percina macrolepida	ST
Mexican tetra	Astyanax mexicanus	ST
Gray redhorse	Moxostoma congestum	ST
Blue sucker	Cycleptus elongatus	SE

TABLE A16-2
STATE-LISTED SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE CARSLBAD RESOURCE AREA

Common Name	Scientific Name	Status
Invertebrates		
Pope's mussel	Popenaias popei	SE
Ovate vertigo	Vertigo ovata	ST
Pecos spring snail	Fontelicella pecosensis	ST
Noel's amphipod	Gammarus desperatus	SE
Pecos assiminea snail	Assiminea pecos	SE
Plants		
Scheer's pincushion cactus	Coryphantha scheeri var. scheeri	SE
Lee's pincushion cactus	Coryphantha sneedii var. leei	SE
Threadleaf false carrot	Aletes filifolius	SS
Chapline's columbine	Aquilegia chaplinei	SE
Gypsum milkvetch	Astragalus gypsodes	SE
Kuenzler's hedgehog cactus	Echinocereus fendleri var. kuenzleri	SE
Lloyd's hedgehog cactus	Echinocereus lloydii	SE
Button cactus	Epithelantha micromeris	SE
Gypsum wild buckwheat	Eriogonum gypsophilum	SE
Prairie gentain	Eustoma grandiflora	SE
Catchfly gentain	Eustoma exaltatum	SE
McKittrick pennyroyal	Hedeoma apiculatum	SE
Crested coral-root	Hexalectris spicata	SE
Gypsum blazing star	Mentzelia perennis	SS
Guadalupe milkwort	Polygala rimulicola var. rimulicola	SE

Note: SE = State Endangered; ST = State Threatened; SS = State Sensitive

Source: BLM files, 1996.

TABLE A16-3
BLM SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA

Common Name	Scientific Name	Status
Mammals		
Cave bat	Myotis velifer brevis	FC2
Yuma myotis	Myotis yumanensis	FC2
Long-eared myotis	Myotis evotis	FC2
Fringed myotis	Myotis thysanodes	FC2
Long-legged myotis	Myotis volans	FC2
Townsend's big-eared bat	Plecotus townsendii	FC2
Big free-tailed bat	Nyctinomops macrotis	FC2
Western small-footed myotis bat	Myotis ciliolabrum	FC2
Gray-footed chipmunk	Tamias canipes	FC2
Arizona black-tailed prairie dog	Cynomys ludovicianus arizonensis	FC2
Pecos River muskrat	Ondatra zibethicus ripensis	FC2
Birds		
White-faced ibis	Plegadis chihi	FC2
Fulvous whistling duck	Dendrocygna bicolor	FC2
Northern goshawk	Accipiter gentilis	FC2
Ferruginous hawk	Buteo regalis	FC2
Black tern	Chlidonias niger	FC2
Burrowing owl	Speotyto cunicularia hypugaea	FC2
Reptiles		
Texas horned lizard	Phrynosoma cornutum	FC2
Fish		
Plains minnow	Hybognathus placitus	FC2
Rio Grande shiner	Notropis jemezanus	FC2
Headwater catfish	Ictalurus lupus	FC2

TABLE A16-3
BLM SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA

Common Name	Scientific Name	Status
Plants		
Tharp's bluestar	Amsonia tharpii	FC2
Guadalupe smooth aster	Aster laevis var. guadalupensis	FC2
Shining coral-root	Hexalectris nitida	FC2
Wright's water-willow	Justicia wrightii	FC2

Note: FC2 = Federal Candidate Category 2. These species were listed as FC2 by the U.S. Fish and Wildlife Service, but are no longer considered candidate species. The BLM has included these former FC2 species into a statewide BLM sensitive species list.

Source: BLM files, 1996

APPENDIX 17
SPECIAL STATUS SPECIES
ROSWELL RESOURCE AREA

This appendix lists the federally listed, state listed, and BLM sensitive plant and animal species potentially occurring in the Roswell Resource Area.

TABLE A17-1
FEDERALLY LISTED SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE ROSWELL RESOURCE AREA

Common Name	Scientific Name	Status
Mammals		
Black-footed ferret	Mustela nigripes	FE
Swift fox	Vulpes velox	FC
Birds		
American peregrine falcon	Falco peregrinus anatum	FE
Northern aplomado falcon	Falco femoralis septentrionalis	FE
Interior least tern	Sterna antillarum athalassos	FE
Brown pelican	Pelicanus occidentalis	FE
Southwestern willow flycatcher	Empidonax traillii extimus	FE with proposed critical habitat
Bald eagle	Haliaeetus leucocephalus	FE
Mexican spotted owl	Strix occidentalis lucida	FT with critical habitat
Mountain plover	Charadrius montanus	FC
Fish		
Pecos gambusia	Gambusia nobilis	FE
Pecos bluntnose shiner	Notropis simus pecosensis	FT with critcal habitat
Pecos pupfish	Cyprinodon pecosensis	FC
Arkansas river shiner	Notropis girardi	FC
Aquatic Invertebrates		
Pecos assiminea snail	Assiminea pecos	FC
Roswell spring snail	Pyrgulopsis roswellensis	FC
Koster's tryonia	Tryonia kosteri	FC
Plants		
Kuenzler's hedgehog cactus	Echinocereus fendleri var. kuenzleri	FE
Puzzle sunflower	Helianthus paradoxus	FC

Note: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate.

Source: BLM files, 1996.

TABLE A17-2
STATE LISTED SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE ROSWELL RESOURCE AREA

Common Name	Scientific Name	Status
Mammals		
Least shrew	Cryptotis parva	ST
Birds		
American peregrine falcon	Falco peregrinus anatum	SE
Northern aplomado falcon	Falco femoralis septentrionalis	SE
Interior least tern	Sterna antillarum athalassos	SE
Brown pelican	Pelicanus occidentalis	SE
Southwestern willow flycatcher	Empidonax traillii extimus	ST
Bald eagle	Haliaeetus leucocephalus	ST
Baird's sparrow	Ammodramus bairdii	ST
Neotropic cormorant	Phalacrocorax olivaceus	ST
Bell's vireo	Vireo bellii	ST
Gray vireo	Vireo vicinoir	ST
Reptiles		
Sand dune lizard	Sceloporus arenicolus	ST
Western ribbon snake	Thamnophis proximus	ST
Western river cooter	Pseudemys gorzugi	ST
Fish		
Arkansas River shiner	Notropis girardi	SE
Pecos bluntnose shiner	Notropis simus pecosensis	ST
Pecos gambusia	Gambusia nobilis	ST
Pecos pupfish	Cyprinodon pecosensis	ST
White Sands pupfish	Cyprinodon tularosa	ST
Bigscale logperch	Percina macrolepida	ST
Rio Grande silvery minnow	Hybognathus amarus	ST
Mexican tetra	Astyanax mexicanus	ST
Greenthroat darter	Etheostoma lepidum	ST

TABLE A17-2
STATE LISTED SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE ROSWELL RESOURCE AREA

Common Name	Scientific Name	Status
Canadian speckled chub	Hybopsis aestivalis tretranemus	ST
Suckermouth minnow	Phenacobius mirabilis	ST
Aquatic Invertebrates		
Pecos assiminea snail	Assiminea pecos	SE
Roswell spring snail	Pyrgulopsis roswellensis	SE
Koster's tryonia	Tryonia kosteri	ST
Invertebrates		
Noel's amphipod	Gammarus desperatus	SE
Plants		
Kuenzler's hedgehog cactus	Echinocereus fendleri var. kuenzleri	SL1
Puzzle sunflower	Helianthus paradoxus	SL1

Note: SE = State Endangered; ST = State Threatened; SL1 = State Endangered List 1

Source: BLM files, 1996.

TABLE A17-3
BLM SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE ROSWELL RESOURCE AREA

Common Name	Scientific Name	Status
Mammals		
Arizona black-tailed prairie dog	Cynomys ludovicianus arizonensis	FC2
Pecos River muskrat	Ondatra zibethicus ripensis	FC2
Gray-footed chipmunk	Tamias canipes	FC2
Organ Mountains Colorado chipmunk	Eutamias quadrivittatus australis	FC2
New Mexican meadow jumping mouse	Zapus hudsonius luteus	FC2
Occult little brown bat	Myotis lucifigus occultus	FC2
Spotted bat	Euderma maculatum	FC2
Pale Townsend's big-eared bat	Plecotus townsendii pallescens	FC2
Fringed myotis	Myotis thysanodes	FC2
Long-legged myotis	Myotis volans	FC2
Long-eared myotis	Myotis evotis	FC2
Small-footed myotis	Myotis ciliolabrum	FC2
Cave myotis	Myotis velifer incautus	FC2
Yuma myotis	Myotis yumanensis	FC2
Big free-tailed bat	Nyctinomops macrotis	FC2
Birds		
Baird's sparrow	Ammodramus bairdii	FC2
White-faced ibis	Plegadis chihi	FC2
Ferruginous hawk	Buteo regalis	FC2
Loggerhead shrike	Lanius ludovicianus	FC2
Northern goshawk	Accipiter gentilis	FC2
Western burrowing owl	Athene cunicularia hypugea	FC2
Reptiles		
Sand dune lizard	Sceloporus arenicolus	FC2
Sacramento Mountain salamander	Aneides hardii	FC2
Texas horned lizard	Phrynosoma cornutum	FC2

TABLE A17-3
BLM SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE ROSWELL RESOURCE AREA

Common Name	Scientific Name	Status
Fish		
White Sands pupfish	Cyprinodon tularosa	FC2
Rio Grande shiner	Notropis jemezanus	FC2
Arkansas River speckled chub	Macrhyobopsis aestivalis tetraneums	FC2
Flathead chub	Platygobio gracilis	FC2
Headwater catfish	Ictalurus lupus	FC2
Longfin dace	Agosia chrysogaster	FC2
Plains minnow	Hybognathus placitus	FC2
Aquatic Invertebrates		
Bonita diving beetle	Deronectes noemexicana	FC2
Invertebrates		
Noel's amphipod	Gammarus desperatus	FC2
Plants		
Kerr's milkvetch	Astragalus kerrii	FC2
Grama grass cactus	Pediocactus papyracanthus	FC2
Sierra Blanca cliff daisy	Chaetopappa elegans	FC2
Sandhill goosefoot	Chenopodium cycloides	FC2

Note: FC2 = Federal Candidate Category 2. These species were listed as FC2 by the U.S. Fish and Wildlife Service, but are no longer considered candidate species. The BLM has included these former FC2 species in a BLM sensitive species list.

Source: BLM files, 1996

APPENDIX 19
DECISIONS FROM PREVIOUS PLANNING DOCUMENTS

This appendix describes planning decisions made in previous Roswell Resource Area land use plans. The decisions in this appendix relate to livestock grazing management and rangeland management. The decisions are arranged in three categories: those carried forward as standard practices; those to be revisited in the resource management plan; and those to be dropped.

DECISIONS CARRIED FORWARD

The decisions listed in this section were carried forward from past land use plans into the Draft Roswell Resource Management Plan as "Management Common to All Alternatives." They were re-worded in the Draft RMP to clarify their meaning.

1. All allotments will be classified as suitable for grazing by cattle, sheep, goats, and/or horses. Any change in the kind of livestock authorized which would dramatically alter historical grazing use patterns will require an environmental assessment (EA). (West Roswell MFPA/EIS Record of Decision)

2. All allotments will be classified as suitable for yearlong grazing unless future activity plans specify a need to change the season of use. (West Roswell MFPA/EIS Record of Decision)

3. Develop Allotment Management Plans (AMPs) for allotments where intensive management appears feasible. Grazing schedules incorporated in AMP's should be designed to achieve upward trend and fair or better condition in 6 to 8 years and maximum sustained carrying capacity in 15 to 20 years. (East Chaves Framework Plan, initially)

Priority for implementation of these AMP's will be determined by Allotment Categorization Process (I, M, C).

4. Individual grazing programs will be developed in consultation and cooperation with affected parties and will identify needed projects and developments. (West Roswell MFPA/EIS Record of Decision)

5. CMPs (now termed AMPs) will be written and fully implemented, and an EA covering each AMP will be prepared. The plans will be monitored and evaluated following implementation so that periodic adjustments, if necessary, can be made on those plans not meeting multiple use objectives. (West Roswell MFPA/EIS Record of Decision)

6. Successful grazing programs already implemented by permittees and in use on ranched may be documented and incorporated into a plan. (West Roswell MFPA/EIS Record of Decision)

7. Documented grazing programs and/or cooperative management plans (CMPs') will be implemented on "I" category allotments. Specific programs and plan will be applied to individual allotments on a priority basis beginning with those allotments with the highest potential for improvement. (West Roswell MFPA/EIS Record of Decision)

8. Revise AMP's that have been implemented and are not showing improvement. Revise or develop grazing schedules designed to achieve an improving trend and fair or better condition in 6 to 8 years and maximum sustained carrying capacity in 15 to 20 years.

Allotment Plan Revisions are handled under the Bureau Manuals, under a multiple use concept. Grazing programs will include deferred, rotation, high-intensity-short duration systems, and other specific grazing systems which combine proper

grazing use with scheduled rest periods. (West Roswell EIS.)

9. The following allotments do not require prescribed grazing management by BLM. Proper grazing use through the efforts of the rancher and the Soil Conservation Service should be encouraged for these allotments.

"C" CATEGORY ALLOTMENTS
5001, 5002, 5003, 5004, 5006, 5008, 5009, 5011, 5013, 5014, 5015, 5016, 5017, 5022, 5023, 5026, 5027, 5030, 5031, 5033, 5035, 5039 (SHERMAN CATTLE), 5039 (RED TANK CORP.), 5042, 5045, 5052, 5054, 5056, 5059, 5060, 5061, 5064, 5070, 5071, 5081, 5093 (East Chaves Management Framework Plan, initially)

10. Range improvements needed to implement grazing systems or other management plans will be designed during specific management plan development. Site-specific impacts from projects will be analyzed in an Environmental Assessment (EA). (West Roswell MFPA/EIS Record of Decision)

11. Vegetation treatments will be designed during specific allotment management plan development. If additional vegetation treatments are identified after the implementation of the allotment management plan, they will be assessed through the EA process prior to implementation of the project. (West Roswell MFPA/EIS Record of Decision)

12. Implementation of rangeland improvement projects will be in accordance with the Final Rangeland Improvement Policy (Washington Office Instruction Memorandum 83-27). In allocating rangeland improvement funds, BLM procedures for evaluating, ranking, and budgeting range improvements will be applied. Appropriated funds available for investment in rangeland improvements will be allocated as follows:

a. First, to the maintenance of improvements that continue to serve a valid purpose or objective and for which the BLM has maintenance responsibility.

b. Second, for the design, construction and maintenance of new rangeland improvements that conform with a specific development plan for the area. Such plans may be Cooperative Management Plans (CMPs) -now Allotment Management Plans (AMPs), Habitat Management Plans (HMPs), Herd Management Plans (HMAPs) or other plans providing a rational decision-making framework for meeting multiple-use management objectives.

c. Additional range improvements will be evaluated and implemented when the need is identified.
(West Roswell MFPA/EIS Record of Decision)

13. Selection of specific areas for range improvements will be evaluated to ensure that highly erosive areas are avoided and to ensure workability of the project. (West Roswell MFPA/EIS Record of Decision)

14. Where soils and vegetation are disturbed, reclamation measures will be taken, if applicable. These measures include returning the land to as near its natural form as possible and reseeding with mixtures of native grasses, legumes, and forbs to prevent erosion. (West Roswell MFPA/EIS Record of Decision)

15. Provisions should be made for planning revegetation of land to a level which is suitable for livestock production on land simultaneous with or upon abandonment of a site. Mining areas, oil and gas roads and pads, mineral sites should be protected either through stipulations or by Bureau action prior to disturbance. (East Chaves Management Framework Plan)

16. Site specific EAs and burn plans will be developed for any prescribed burns. (West Roswell MFPA/EIS Record of Decision)

17. Conduct selective salt cedar control to prevent loss of four-wing saltbush and cottonwood trees. (East Chaves Management Framework Plan)

18. All application rates of herbicides will be determined based on individual range sites and the condition at the time of application. (West Roswell MFPA/EIS Record of Decision)

19. Only federally registered pesticides would be used on public lands except as authorized by Section 24. C., Public Law 92-516, the Federal Environmental Pesticide Control Act of 1972. Section 24.C. provides for state registration of certain pesticides for local needs within the state. Any pesticide proposal planned under a state registration would include a copy of the state label.

Application of herbicides will conform to BLM Manual 9220 and State of new Mexico and U.S. Environmental Protection Agency (USEPA) standards. Herbicides proposed for use will be authorized by the USEPA, the New Mexico Department of Agriculture (NMDA), and the Department of Interior (DOI), and must be registered by the USEPA and NMDA. NMDA restricted use regulations will be consulted prior to any herbicide application. (West Roswell MFPA/EIS Record of Decision...this decision has been re-worded in the Vegetation Treatment on BLM Lands EIS and that wording precedes this paragraph.)

20. All livestock would be removed from treated pastures prior to aerial spraying or ground applications when using foliar spray. Livestock should be removed following first ½ inch of moisture following pellet treatment. Herbicide label requirements will be complied with for grazing of domestic animals after application. Livestock grazing would be deferred for a minimum of two consecutive growing seasons. (West Roswell MFPA/EIS Record of Decision & Vegetation Treatment on BLM Lands EIS)

21. Onsite analysis of areas proposed for inclusion in projected brush control treatments will be made to avoid highly desirable wildlife habitat which would be susceptible to the treatments being considered. (West Roswell MFPA/EIS Record of Decision)

22. Important wildlife habitat, such as broadleaf tree groves, aquatic and riparian sites, dirt tanks, watering tubs, active raptor nests, and the areas around them would be protected during brush control operations. (West Roswell MFPA/EIS Record of Decision)

23. Conduct selective control leaving islands of salt cedar for wildlife nesting habitat. (East Chaves Management Framework Plan)

24. Conduct mesquite control to provide an adequate amount of untreated mesquite cover to meet optimum quail habitat needs on those sites occupied by scaled quail. (East Chaves Management Framework Plan)

25. Uprooted mesquite will be left in place to provide wildlife habitat. Uprooted cholla will be stacked and left in place or burned, depending on wildlife or other multiple-use needs. (West Roswell MFPA/EIS Record of Decision)

26. Big game numbers will be managed by the NMDG&F to meet populations goals and trends. (West Roswell MFPA/EIS Record of Decision)

27. Allotments within the 1.5 million acre area, known as the Pronghorn Antelope Study Area, will be inventoried for production of fall forbs and analyzed for suitability for pronghorn reintroduction. Once allotments have been determined to be suitable, a cooperative agreement will be developed and implemented through cooperation with NMDG&F and landowners. (West Roswell MFPA/EIS Record of Decision)

28. Construct all fences in antelope habitat to provide for as much free access for antelope as possible and still provide for reasonable control. (East Chaves Management Framework Plan)

29. New or expanded grazing use and support facilities will be evaluated on a case-by case basis so that impairment of wildlife habitat will be minimized. (West Roswell MFPA/EIS Record of Decision)

30. Where BLM controls water sources, water will be made available to wildlife when livestock are on and off the allotments or

pastures. (West Roswell MFPA/EIS Record of Decision)

31. Livestock watering areas will be located to avoid livestock concentration near sensitive wildlife habitat areas. (East Chaves Management Framework Plan)

32. Water should be available for wildlife. It will be the Bureau's responsibility to provide water for wildlife's needs, either by developing additional water sources or facilities, or making arrangements by agreements for the use of existing private water sources and facilities. Consideration will be given to requiring that water be available yearlong for wildlife to future private and federal watering facilities that may be installed on NRL. (East Chaves Management Framework Plan)

33. Escape ramps will be required in all water troughs and open storage tanks. (West Roswell MFPA/EIS Record of Decision)

34. Areas meeting riparian and wetland habitat criteria will be assessed to determine if protection is needed to provide wildlife habitat. Protection measures will be selected for individual situations to include protective fencing, adjustments in livestock use, and/or establishment of buffer strips, as necessary. Where domestic livestock are excluded from riparian areas, alternate water sources for livestock will be provided. (West Roswell MFPA/EIS Record of Decision)

35. Inventory and provide techniques for the protection of Threatened or Endangered Vegetative Species as directed by law. (East Chaves Management Framework Plan)

36. A threatened, endangered, State-listed, or proposed-listed species clearance will be conducted by appropriate BLM staff biologist prior to the beginning of any project. If a "may affect" determination is made by the staff biologist, consultation will be undertaken with the USFWS, NMDG&F, or the NMNHP listing the species which may be affected. The results of the consultation will determine the course of action necessary to avoid adverse effects on listed species. (West Roswell MFPA/EIS Record of Decision)

37. Before surface-disturbing activities take place, cultural resources will be inventoried and evaluated. All reasonable efforts will be made to avoid adverse impacts on cultural resources. If impacts are unavoidable, BLM will consult with the State Historic Preservation Officer (SHPO) to develop mitigating measures. (West Roswell MFPA/EIS Record of Decision)

38. Prior to the implementation of surface-disturbing activities, paleontological resources will be inventoried and evaluated. (West Roswell MFPA/EIS Record of Decision)

39. The cultural resource program will properly identify those areas which are sprayed with chemical herbicide so that future excavators of those areas will be informed of the possibility of contamination of radiocarbon samples. This information will then become a part of the antiquities permit issued for the excavation of that site. (West Roswell MFPA/EIS Record of Decision)

40. Allotments will be monitored to determine the changes in rangeland condition and trend due to changes in grazing management, vegetation treatments, and rangeland improvements. (West Roswell MFPA/EIS Record of Decision)

41. Any livestock adjustments will be based on *monitoring data* (utilization studies, actual use data, precipitation, trend, and condition). (*43 CFR 4100 Grazing Administration 4110.3* and West Roswell MFPA/EIS Record of Decision)

42. Develop a program to reduce accidental trespass resulting from other NRL users leaving gates open. This includes:

a) Installing cattle guards instead of gates where there is a relatively high intensity traffic or when problem areas are identified.

b) Provide signs instructing users to,

"Please Close Gates" where only occasional traffic is anticipated.

c) Install leverage devices to aid in closing tight wire gates.

(East Chaves Management Framework Plan)

43. Continue to preserve and protect the Mathers Natural Area. (East Chaves Management Framework Plan)

44. Secure legal access by easement acquisition where roads and trails cross private lands leading to allotments. Easement acquisition will be identified later as information is compiled with an inventory of the area's access problems. (East Chaves Management Framework Plan)

45. Disposal of the lands in the following allotments should be encouraged either by sale or as a land exchange base. (East Chaves Management Framework Plan)

Allotment Number	Public Acreage
5002	380
5003	200
5006	160
5035	964
5052	40
5056	360
5061	240
5064	881
5089	400
Parcel #1, T. 7 S., R. 29 E., Sec. 23	40
Total	3665

46. Readjust grazing district boundary to coincide with allotment boundaries. (East Chaves Management Framework Plan)

DECISIONS TO BE REVISITED IN THE RESOURCE MANAGEMENT PLAN

The decisions listed in this section were considered for retention in the Roswell RMP. Those that were viable were addressed in the RMP.

1. No mesquite control will be conducted during the critical nesting season for ground nesting birds, March 1 to August 1. (East Chaves Management Framework Plan)

2. Identified 203 miles of fence line construction, 246 new waters, 961,000 acres for chemical treatment, 440 acres for mechanical treatment and 520 acres for prescribed burns. Allotment management plans written since that document identified an additional 4,572 acres for mechanical treatment and construction of 35 miles of pipeline. (East Roswell EIS)

3. Identified 47.0 miles of fence line construction, 69.1 miles of pipeline construction, 80 new water developments, and identified 206,272 acres for vegetative treatment (17,655 acres of mechanical, 36,737 acres of chemical treatment, 1,880 acres of prescribed fire, and 150,000 acres of shinnery control by chemical treatment in Chaves County, east of the Pecos River). Allotment management plans written since that document identified an additional 13 miles of fence line construction, 18,880 acres of chemical treatment, and 130 acres of prescribed fire. (West Roswell MFPA/EIS)

4. Additional forage will be provided for big game and other wildlife species from vegetation treatments. Additional forage produced by improved range conditions will be available to improve wildlife habitat and increase big game herd numbers. Increased cover (sand bluestem grass) will be provided for lesser prairie chickens in the area east of the Pecos River through shinnery oak control. (West Roswell MFPA/EIS Record of Decision)

5. In areas of shinnery oak control, 20 to 30 percent of existing shinnery will be left for wildlife. The desired percent of controlled shinnery can be attained by either applying the herbicide at a rate designed to achieve 70 to 80 percent kill or leaving interspersed areas of uncontrolled shinnery. (West Roswell MFPA/EIS Record of Decision)

6. Three methods of vegetation treatments will be used to control undesirable brush species; chemical brush control, mechanical brush control, and prescribed burning. (West Roswell MFPA/EIS Record of Decision)

Tractor-mounted root-knives will be used to grub mesquite and cholla,

7. Prescribed burning will be used primarily for maintenance of alkali sacaton or giant sacaton swales to remove rank and unpalatable growth. (West Roswell MFPA/EIS Record of Decision)

8. Additional vegetation treatments will be evaluated and implemented when the need is identified. (West Roswell MFPA/EIS Record of Decision)

DECISIONS TO BE DROPPED

The decisions listed in this section have not been carried forward from past land use plans into the Roswell RMP.

1. Any predator damage control proposals in this unit on NRL by the Fish and Wildlife Service or New Mexico Department of Game and Fish will need verified losses before authorization is made. Small scale predator damage prevention conducted by individuals through trapping or shooting measures does not need special authorization, providing toxicant are not used. (East Chaves Management Framework Plan)

DROP RATIONALE: Animal damage control proposals are reviewed, assessed and conducted by USDA Animal Damage Control.

2. Revise the following previously prepared AMPs to increase as much livestock forage as possible while still meeting the vegetative goals for wildlife habitat. (East Chaves Management Framework Plan)

A minimum rest standard of at least 4 months rest during the growing season for one year out of four will be applied. The allotments are classified as suitable for use by all classes of livestock for all seasons.

5043, 5046, 5053, 5063, 5075, 5077, 5078

DROP RATIONALE: Allotment Plan Revisions are handled under the Bureau Manuals, under a multiple use concept. Grazing programs will include deferred, rotation, high-intensity-short duration systems, and other specific grazing systems which combine proper grazing use with scheduled rest periods. (West Roswell EIS.)

3. On allotments which have public lands outside the planning unit, develop grazing management guidelines to cover the entire allotment in other land use planning effort. (East Chaves Management Framework Plan)

4038, 4039, 4040, 4046, 4050, PARCEL #3

DROP RATIONALE: Grazing management guidelines were handled in the West Roswell EIS.

4. Conduct mesquite control on identified lands with the use of the following guidelines:

Conduct mesquite using only selective mechanical control in identified mule deer habitat.

Conduct mesquite control using only selective mechanical control in identified lesser prairie chicken habitat where shinnery oak is present.

Conduct mesquite control using only selective mechanical and chemical control in desirable nesting habitat for protected bird species. (East Chaves Management Framework Plan)

DROP RATIONALE: Mechanical mesquite control has become too costly and selective chemicals have developed that will do the job more economically. A combination of vegetation treatment tools, such as chemical + prescribed

fire or mechanical + chemical could be utilized to achieve the desired result at a lower cost.

5. No mechanical mesquite in the Mescalero Archaeological District. (East Chaves Management Framework Plan)

DROP RATIONALE: No mechanical mesquite control is now an accepted and standard practice due to high cost as well as prevention of extreme surface damage in an archaeological district.

6. Conduct salt cedar control on identified lands with the use of the following guidelines:

> Conduct selective mechanical control to prevent loss of four-wing saltbush and cottonwood trees.
>
> Conduct selective mechanical control leaving islands of salt cedar for wildlife nesting habitat. (East Chaves Management Framework Plan)

DROP RATIONALE: Mechanical salt cedar control has become too costly and selective chemicals have developed that will do the job more economically. A combination of vegetation treatment tools, such as chemical + prescribed fire or mechanical + chemical could be utilized to achieve the desired result at a lower cost.

7. Survey the extent of rangeland that is unproductive because of past mineral activities and initiate a Bureau effort to restore productivity of these lands. (East Chaves Management Framework Plan)

DROP RATIONALE: Completed

8. Initiate an active trespass (Unauthorized Use) program in the Planning unit. (East Chaves Management Framework Plan)

DROP RATIONALE: Completed.

9. Permit controlled burning of sacaton draws between January 1 and March 30 with the following limitations and considerations:

> No burning will be conducted within 200 feet of a water source. (East Chaves Management Framework Plan)

DROP RATIONALE: May not be valid in all cases. Site specific environmental assessments are written on prescribed burns at which time protective measures which may be necessary for that particular location are developed and implemented.

10. Controlled burning will be conducted during the month of March in Comanche Draw on Allotment 5057 in order to protect Baird's Sparrow and McCown's Longspur habitat requirements. (East Chaves Management Framework Plan)

DROP RATIONALE: Controlled burning in sacaton bottoms is an effective management tool for these birds habitat needs, which are not restricted to this allotment or draw.

11. No conflicts were identified with classifying the unit for all seasons of use by all classes of livestock. Any needed mitigation could be applied within this classification. Also there were no problems identified which conflicted with the minimum rest standard. (East Chaves Management Framework Plan)

DROP RATIONALE: Replaced by decision in the West Roswell MFPA/EIS Record of Decision.

12. The following allotments are to receive grazing management (development of allotment management plans). Grazing management will not be applied to the entire allotment, but only to the larger portions of public land. A minimum rest period of at least 4 months during the growing season for one year out of every three years will be applied. In addition to meeting range forage goals, prescribed grazing management must provide for the needs of wildlife habitat. (East Chaves Management Framework Plan)

> These allotments are classified as

suitable for use by all classes of livestock for all seasons.

5005, 5010, 5018, 5026, 5038, 5039, 5040, 5088

DROP RATIONALE: Section 15 allotments containing small amounts of public land scattered over allotment; BLM does not control livestock numbers on these allotments; rest period clause modified by West Roswell MFPA/EIS.

13. The following allotments are to receive grazing management (development of allotment management plans). Grazing management will not be applied to the entire allotment, but only to the larger portions of public land. A minimum rest period of at least 4 months during the growing season for one year out of every three years will be applied. In addition to meeting range forage goals, prescribed grazing management must provide for the needs of wildlife habitat. (East Chaves Management Framework Plan)

These allotments are classified as suitable for use by all classes of livestock for all seasons.

5007, 5012, 5019, 5021, 5029, 5034, 5041, 5057, 5065, 5079, 5082

DROP RATIONALE: Allotment is in "M" category and is in good condition, considered to be low priority for AMP development, rest period clause modified by West Roswell MFPA/EIS. (See also Carry Forward Decision #3)

14. The following allotments are to receive grazing management (development of allotment management plan). Grazing management may not be applied to the entire allotment, but only to the larger portions of public land. A minimum rest period of at least 4 months during the growing season for one year out of every three years will be applied. In addition to meeting range forage goals, prescribed grazing management must provide for the needs of wildlife habitat. (East Chaves Management Framework Plan)

These allotments are classified as suitable for use by all classes of livestock for all seasons.

5014 (West), 5020, 5024, 5027, 5032, 5043, 5046 & 5047 (as part of 5043), 5049, 5051, 5053, 5058, 5062, 5063, 5068 (as part of 5053), 5069, 5072, 5073, 5074, 5075, 5077, 5083, 5084, 5091, 5092

DROP RATIONALE: Allotment management plan has been developed, rest period clause modified by West Roswell MFPA/EIS.

15. The following allotments are to receive grazing management (development of allotment management plan). Grazing management may not be applied to the entire allotment, but only to the larger portions of public land. A minimum rest period of at least 4 months during the growing season for one year out of every three years will be applied. In addition to meeting range forage goals, prescribed grazing management must provide for the needs of wildlife habitat. (East Chaves Management Framework Plan)

These allotments are classified as suitable for use by all classes of livestock for all seasons.

5028, 5044, 5066

DROP RATIONALE: Allotment management plan being developed; rest period clause modified by West Roswell MFPA/EIS.

16. Grazing leases are to be issued on these parcels. Continue classifications for any season of use and for all classes of livestock. (East Chaves Management Framework Plan)

PARCEL #1: T. 7 S., R. 29 E. SECTION 23 NW¼SW¼
PARCEL #2: T. 0 S., R. 27 E. (304 ACRES)

DROP RATIONALE: Administered by Carlsbad Resource Area

17. Identify areas suitable, potentially suitable, and unsuitable for livestock use. Do prior to writing AMP's or consider in determining stocking rate. (East Chaves Management Framework Plan)

DROP RATIONALE: Completed in East and West Roswell EIS/MFPA.

18. Revise AMP'S - First Priority (East Chaves Management Framework Plan)

5045 (portions of which were combined with 5043), 5053 (in combination with 5068), 5075, 5077

DROP RATIONALE: Completed. Allotment Plan Revisions are handled under the Bureau Manuals, under a multiple use concept. Grazing programs will include deferred, rotation, high-intensity-short duration systems, and other specific grazing systems which combine proper grazing use with scheduled rest periods. (West Roswell EIS.) [See Drop Decision #2] (See also Carry Forward Decision #3.]

19. Revise AMP'S - Second priority - AMP's in Fair condition (East Chaves Management Framework Plan)

5063

DROP RATIONALE: Completed. Allotment Plan Revisions are handled under the Bureau Manuals, under a multiple use concept. Grazing programs will include deferred, rotation, high-intensity-short duration systems, and other specific grazing systems which combine proper grazing use with scheduled rest periods. (West Roswell EIS.) [See Drop Decision #2] (See also Carry Forward Decision #3.]

20. Develop AMPs for allotments where intensive management appears feasible. First priority - allotments showing declining trend (East Chaves Management Framework Plan)

5014

DROP RATIONALE: Completed (See also Drop Decision #13)

21. Develop AMPs for allotments where intensive management appears feasible. Second priority - allotments showing static trend and poor condition. (East Chaves Management Framework Plan)

5005, 5010, 5032, 5034, 5065, 5079, 5091

DROP RATIONALE: Allotment is "M" Category and is in good condition, considered to be low priority. (See also Drop Decisions #12, 13 and 14) (See also Carry Forward Decision #3.]

22. Second priority for AMP development - allotments showing static trend and poor condition. (East Chaves Management Framework Plan)

5008, 5009, 5011, 5023, 5026, 5040, 5059

DROP RATIONALE: Allotment in "C" Category. (See also Drop Decision #12.) (See also Carry Forward Decision #9.)

23. Second priority for AMP development-allotments showing static trend and poor condition. (East Chaves Management Framework Plan)

5024, 5047 (Combined with 5043), 5051, 5073, 5074, 5083, 5085

DROP RATIONALE: Allotment in "I" Category (See also Drop Decision #14.) (See also Carry Forward Decision #3.)

24. Second priority for AMP Development - allotments showing static trend and poor condition. (East Chaves Management Framework Plan)

5080 C.O. HOLLOWAY

DROP RATIONALE: No such allotment

25. Third priority for AMP development - allotments showing static trend and fair

condition. (East Chaves Management Framework Plan)

5007, 5029, 5057, 5082

DROP RATIONALE: Allotment is in "M" Category and is in good condition, considered to be low priority. (See also Drop Decision #13.) (See Carry Forward Decision #3.)

26. Third priority for AMP development - allotments showing static trend and Fair condition. (East Chaves Management Framework Plan)

5035

DROP RATIONALE: "C" Category Allotment. (See also Drop Decision #12.) (See also Carry Forward Decisions #3 and 9.)

27. Third priority for AMP development - allotments showing static trend and fair condition. (East Chaves Management Framework Plan)

5049, 5058

DROP RATIONALE: Completed. Allotment is in "M" Category and is in good condition, considered to be low priority. (See also Drop Decisions #13 and 14.) (See also Carry Forward Decision #3.)

28. Third priority for AMP development - allotments showing static trend and fair condition. (East Chaves Management Framework Plan)

5068

DROP RATIONALE: Completed - PART OF 5053 (See Drop Decision #18.)

29. Third priority for AMP development - allotments showing static trend and fair condition. (East Chaves Management Framework Plan)

5084

DROP RATIONALE: Allotment in "I" Category (See also Drop Decision #14.) (See also Carry Forward Decision #3.)

30. Fifth priority for AMP development - allotments showing improving trend and fair condition. (East Chaves Management Framework Plan)

5013

DROP RATIONALE: Allotment in "C" Category. (See also Drop Decision #12.) (See also Carry Forward Decision #9.)

31. Fifth priority for AMP development - allotments showing improving trend and fair condition. (East Chaves Management Framework Plan)

5021, 5062, 5072

DROP RATIONALE: Allotment is in "M" Category and is in good condition, considered to be low priority. (See also Drop Decisions #13 and 14.) (See also Carry Forward Decision #3.)

32. Fifth priority for AMP development - allotments showing improving trend and fair condition. (East Chaves Management Framework Plan)

5037, 5069

DROP RATIONALE: Completed. (See also Drop Decision #14.) (See also Carry Forward Decision #3.)

33. Conduct a soil survey in the north half of the P.U. up to level 3. This to be done by qualified people or institutions. (East Chaves Management Framework Plan)

DROP RATIONALE: Completed by Soil Conservation Service.

34. Determine the current range capacity for the unit and adjust livestock numbers as needed to meet that capacity, and provide for allocation of forage to meet multiple use needs identified in the AMP process, and as the analysis of the

East Roswell Environmental Impact Statement indicates. (East Chaves Management Framework Plan)

DROP RATIONALE: Initial adjustments completed, monitoring studies continuing.

35. Conduct a re-evaluation of the grazing capacity for all NRL in the Unit. Preferably this is to be done by contract. (East Chaves Management Framework Plan)

DROP RATIONALE: Completed

36. The fence to be constructed on Allotment 5025 must provide for motorcycle access through the fence within the Haystack Butte ORV area. (East Chaves Management Framework Plan)

DROP RATIONALE: Completed

37. Recommend nomination of Bosque Grande to the National Register of Historic Places. (East Chaves Management Framework Plan)

DROP RATIONALE: In July, 1977, an evaluation conducted of this site revealed that no public land was involved. No BLM action was necessary.

38. MFPA proposed development of an AMP. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement)

3019, 3029, 3034, 3039, 3046, 3047, 3048, 3049, 3058, 3074, 3075, 3079, 3081, 4001, 4018, 4019, 4021, 4022, 4023, 4029, 4032, 4040, 4051, 4055, 4056, 4067, 4073, 4076, 4092,

DROP RATIONALE: This is an "I" Category allotment and all "I" allotments are proposed for AMP development. (See also Carry Forward Decision #3.)

39. MFPA proposed development of an AMP. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement)

3035, 3048, 3049, 3053, 3075, 3076, 3079, 3081, 3085, 4020, 4025, 4028, 4032, 4038, 4041, 4044, 4046, 4051, 4076, 4079, 4084, 4090

DROP RATIONALE: Developed AMP

40. MFPA proposed range improvements to be funded. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement)

Allot 4069 2 water Developments

DROP RATIONALE: "C" Category Allotment

41. EIS proposed development of an AMP. (East Roswell EIS)

5005, 5010, 5018, 5139

DROP RATIONALE: Section 15 allotment, no control over numbers. Small amounts of public land scattered over the allotment. Allotment is in "M" category and is in good condition, considered to be low priority. Duplicate decision in East Chaves MFP. (See also Drop Decisions #12, 13 and 14) (See also Carry Forward Decision #3.)

42. EIS proposed development of an AMP. (East Roswell EIS)

5007, 5012, 5019, 5021, 5034, 5041, 5094, 5185

DROP RATIONALE: Second priority for AMP development. Allotment is in "M" Category and is in good condition, considered to be low priority. Duplicate decision in East Chaves MFP. (See also Drop Decisions #13, 21 and 31.) (See Carry Forward Decision #3.)

43. EIS proposed development of an AMP. (East Roswell EIS)

5014, 5020, 5024, 5028, 5032, 5036, 5037, 5043, 5046, 5047, 5049, 5051, 5053, 5058, 5061, 5062, 5063, 5066, 5069, 5072, 5073, 5074, 5075, 5078,

5083, 5084, 5091, 5092, 5566 (In conjunction with 5066),

DROP RATIONALE: AMP completed. Duplicate decision in East Chaves MFP. (See also Drop Decision #13, 14, 19, 23, 27, 29, 31 and 32.) (See Carry Forward Decision #3.)

44. EIS proposed development of an AMP. (East Roswell EIS)

5025, 5029, 5038, 5044, 5057, 5079, 5082, 5085, 5090, 5538 (In conjunction with 5038),

DROP RATIONALE: Duplicate decision in East Chaves MFP. (See also Drop Decisions #12, 13, 23 and 25.) (See Carry Forward Decision #3.)

45. EIS Proposed Exclosures. (East Roswell EIS)

ALLOTMENT	Exclosure
5062	1
5066	1
5069	1
5075	13

DROP RATIONALE: Exclosures on specified allotments, in specified locations were dropped in Record of Decision, West Roswell MFPA/EIS.

46. These areas (broadleaf tree groves, aquatic and riparian sites, dirt tanks, watering tubs, active raptor nests) will be protected through the use of nonlethal rates of herbicides, or other means as deemed appropriate by resource specialists. Pseudoriparian areas and most major drainages, will be excluded from chemical treatment programs within a distance of 1,320 feet. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: This decision was replaced by the standard buffers developed in the Final Environmental Impact Statement for Vegetation Treatment on BLM Lands.

47. Decreases in livestock numbers will be made where necessary as indicated by three to five years of monitoring studies data on "I" (Improve) category allotments only. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Replaced by regulations (43 CFR 4110.3-2b.)

48. Increases in livestock numbers, where indicated by five years of monitoring studies data, will occur on the "M" (Maintain) and "I" category allotments. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Replaced by regulations (43 CFR 4110.3-1)

49. Short-term stocking rates for livestock (1-5 years) will be based on current range condition and trend ratings and anticipated to be 219,695 AUMs. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Completed.

50. Consider consolidating the lands within the following allotments to improve range administration and resource management.:

5004, 5005, 5007, 5009, 5010, 5011, 5012, 5014, 5018, 5019, 5020, 5021, 5025, 5032, 5034, 5036, 5037, 5038, 5040, 5045, 5047, 5051, 5052, 5058, 5062, 5063, 5065, 5066, 5069, 5072, 5074, 5075, 5084, 5085, 5088, 5090, 5091

Priority for any land exchange, however, should be given to opportunities to acquire specific lands for various resources values as identified in the MFP Decisions. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: The decision to consolidate lands within these specific allotments can be done under the Federal Land Management Policy Act, Sec. 205 and 206, as a discretionary action.

51. Long-term stocking rates for livestock (6-20 years) are projected to be 256,018 AUMs and will be based on long-term range condition and trend ratings. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Replaced by regulations (43 CFR Subpart 4100)

52. The BLM will give first priority to authorizing the construction, modification, and maintenance of range improvements fully funded by permittees or lessees. (The permittee or lessee will have title to removable range improvements fully funded by private funds. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Replaced by regulations (43 CFR 4120.3); priorities set by Public Rangelands Improvement Act of 1978 (PRIA) and further described by BLM Manual 4120 and by BLM policy.

53. Second priority (for range improvements) will be given to BLM investment in range improvements identified for "I" category allotments. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Priorities set by Public Rangelands Improvement Act of 1978 (PRIA) and further described by BLM Manual 4120 and by BLM policy.

54. Third priority will be given to BLM investment in improvements identified for the "M" category allotments. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Priorities set by Public Rangelands Improvement Act of 1978 (PRIA) and further described by BLM Manual 4120 and by BLM policy.

55. Fences designed for construction in big game use areas will meet BLM fencing specifications (BLM Manual 1740), unless otherwise authorized. Fences authorized by cooperative agreement or other range improvement permits will be subjects to modification to achieve management objectives deemed necessary by the authorized officer. (West Roswell Management Framework Plan Amendment/Environmental Impact Statement Record of Decision)

DROP RATIONALE: Replaced by regulations (43 CFR 4120.3)

APPENDIX 20
TREATING VEGETATION WITH HERBICIDES

This appendix describes the policies, standards, and practices to be used on public lands in the Roswell Resource Area when treating vegetation with herbicides. These requirements are derived from BLM policy, the Final EIS on Vegetation Treatment on BLM Lands in Thirteen Western States, decisions made in Roswell Resource Area land use plans, and mitigations developed through environmental assessments.

The following policies, standards, and practices for using herbicides on public lands are to be considered in the planning and implementation of each project involving herbicides. If appropriate, any of these items may be included as design features in a project proposal and use authorization.

PROJECT DESIGN, ENVIRONMENTAL ANALYSIS

1. The treatment of noxious weeds with herbicides would be conducted in accordance with current BLM policy, including Manual Sections 9015 (Integrated Weed Management) and 9220 (Integrated Pest Management).

2. Environmental impacts of proposed projects would be identified through an environmental assessment. Measures would be taken to mitigate potentially adverse environmental impacts.

3. Proposed projects would be reviewed with user groups, interested organizations and the general public.

4. Integrated pest control methods that may combine chemical, manual, mechanical, or biological control techniques would be used where they minimize adverse impacts of pest control.

5. Federal and state agencies with responsibilities for the environment, public health, and fish and wildlife would be informed of programs involving herbicide use. Cooperative measures among the agencies would be developed, when appropriate.

6. Vegetation treatments would be planned (including NEPA analysis) during the development of activity plans (e.g., allotment management plans, habitat management plans, or cooperative resource management plans). If additional vegetation treatments are identified during or after the implementation of an activity plan, the projects would be assessed in an environmental assessment during the planning of the subsequent project.

7. A special status species clearance would be conducted as part of project planning. Appropriate informal or formal consultation, or both, would be undertaken with the agency [U.S. Fish and Wildlife Service (USFWS), New Mexico Department of Game and Fish (NMDG&F), or the New Mexico Natural Heritage Program (NMNHP)] listing the species which may be affected. The results of the consultation would determine the course of action needed to avoid adverse effects on listed species.

8. During project planning, onsite visits would be made to areas proposed for brush control treatments to identify highly desirable wildlife habitat that would be adversely affected by the proposed treatments and should be avoided.

9. The following are minimum widths (measured horizontally) for unsprayed buffer strips for all herbicides applied adjacent to the Pecos River, any livestock watering locations, ranch houses,

or known locations of threatened or endangered plants.

Type of application	Buffer
Aerial Spraying:	
Spraying altitude	
10 - 15 feet above ground	100 feet
Vehicle spraying	25 feet
Hand Application	10 feet

Herbicides would be wiped on individual plants within 10 feet of water where application is critical.

10. Protective buffer zones would be provided around important riparian or wetland habitats along streams, rivers, lakes that are not designed to be treated, and around xeroriparian areas along important dry water courses. Xeroriparian areas are defined as vegetation zones occurring in or adjacent to ephemeral desert washes or stream courses, exhibiting more luxuriant growth as an influence of increased available water. Some species of vegetation may be the same as occur on the adjacent uplands, but the growth forms are noticeably larger than the upland plants.

11. Foliar herbicides would not be applied from the air within a minimum of 200 meters (657 feet) of special habitat features such as aquatic habitats, raptor nest sites, desirable native desert trees, caves, wildlife waters, exclosures, certain wildlife study sites, and important prairie chicken lek sites.

12. Irregular boundaries for maximizing edge effect would be incorporated into all methods of treatment. Undisturbed islands of natural vegetation would be left, where appropriate, to minimize negative impacts to wildlife.

13. To minimize drift and volatilization, aerial applications of all the herbicides would be confined to periods when: wind speed is less than six miles per hour for liquids or fifteen miles per hour for granules, or when lesser wind speed is specified on the label; air temperature is under 85 degrees F.; precipitation is not occurring or imminent; snow or ice is not covering the target foliage; fog does not significantly reduce visibility; and, air turbulence would not affect normal spray patterns. Label directions would be followed if they require additional restrictions. Low volatility formulations would be used.

14. Daily measurements of weather conditions during application would be made by trained personnel at spray sites. Additional measurements would be made at any time a weather change appears to be taking place which could jeopardize safe placement of the spray on the target area.

AGENCY REQUIREMENTS AND APPROVALS

15. Only federally registered pesticides would be used on public lands, except as authorized by Section 24. C., Public law 92-516, the Federal Environmental Pesticide Control Act of 1972. Section 24.C. provides for state registration of certain pesticides for local needs within the state. Any pesticide use proposed under a state registration would include a copy of the state label.

16. Tank mixes of pesticides may be approved if the mixture is: provided for on one or more labels of Environmental Protection Agency (EPA) registered products; provided for under a state registration; or, tested and has a written recommendation by an Agricultural Experiment Station or the State Department of Agriculture. The pesticides recommended in the mixture must be applied at a dosage rate not to exceed the label instructions for use of any single product for the same targeted pest and must not be specifically prohibited from mixing on either label. Each tank mix proposal must be accompanied by appropriate labels or a written recommendation, or both.

17. The use of a registered pesticide at less than the label dosage may be authorized if that use is recommended in writing by a knowledgeable expert, pursuant to the EPA's Pesticide Enforcement Policy Statement No. 1, dated May 5, 1975, and September 17, 1975.

18. All proposed use of herbicides on public lands would be reviewed for approval in advance of use by the BLM's Headquarters Office in Washington, D.C.

19. The application of herbicides would conform to BLM Manual 9011, and State of New Mexico and EPA standards. Herbicides proposed for use would be authorized by the EPA, the New Mexico Department of Agriculture (NMDA) and the Department of Interior (USDI), and must be registered by the EPA and NMDA. NMDA restricted-use regulations would be consulted prior to any herbicide application.

APPLICATION

20. The rates of herbicide application would be determined based on the condition and character of individual range sites at the time of application.

21. All individuals associated with the handling or application of herbicides on public lands would be familiar with the emergency procedures to be used in case of a herbicide spill.

22. When a herbicide application project is conducted by BLM personnel, an employee holding a valid pesticide application certification would monitor and supervise the project. Work done by contractors, or other individuals authorized by BLM, would be conducted by individuals having a valid state certification.

23. The applicable federal regulations concerning the storage and disposal of herbicides and herbicide containers would be followed and are described on the label of each herbicide.

FOLLOW-UP

24. All livestock would be removed from treated pastures prior to aerial spraying or ground applications involving foliar spray. Livestock should be removed after the first 1/2 inch of moisture following pellet treatment. Herbicide label requirements would be met when grazing domestic animals after application. Livestock grazing would be deferred for a minimum of two consecutive growing seasons.

25. The response of vegetation to treatment would be monitored by methods established prior to treatment. Onsite evaluation of herbicide effectiveness and the resulting secondary succession would be conducted. Data gathered would be used to improve the brush control process.

26. Records of areas sprayed with herbicides would be maintained with cultural resource program information so that researchers can be informed of the possible contamination of radiocarbon samples.

GLOSSARY

ACQUIRED LANDS. Lands in Federal ownership which were obtained by the government through purchase, condemnation, gift, or exchange.

ACRE-FOOT (AC-FT). Volume of water that will cover one acre of land to a depth of one foot; equals 43,560 cubic feet or 325,851 gallons.

ADJUDICATION. A formal court proceeding which results in the determination of the validity and extent of a water right.

AERIAL PHOTOGRAPHY. Photographs taken of the earth's surface from an aircraft. Both color and infra-red aerial photos can be produced which show surface features. Photographs can indicate vegetation changes and water content associated with fractures where caves may be located.

AGGREGATE. Any of several hard, inert materials, such as sand, gravel, slag, or crushed stone, used for mixing with a cementing or bituminous material to form concrete, mortar, or plaster; or used alone, as in railroad ballast or graded fill.

AIR POLLUTION. The general term alluding to the undesirable addition of substances (gases, liquids, or solid particles) to the atmosphere that are foreign to the natural atmosphere or are present in quantities exceeding natural concentrations.

ALKALI LAKES. Shallow plate-like depressions in central portions of basins that drain internally, collect runoff and evaporate rapidly; salt playas.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A livestock grazing activity plan for a specific allotment based on multiple-use resource management objectives. The AMP considers livestock grazing in relation to other uses of the rangelands and in relation to renewable resources (i.e., watershed, vegetation and wildlife). An AMP includes the seasons of use, number of livestock permitted on the allotment, grazing system, and the rangeland developments needed. AMPs are prepared in consultation, cooperation and coordination with the permittee(s), lessee(s) or other involved affected parties.

ANIMAL UNIT MONTH (AUM). The amount of forage necessary for the sustenance of one cow with a nursing calf or its equivalent for a period of one month.

ANNUAL WATER YIELD. The total streamflow volume that passes a specified point in a watershed during a year. It generally equals total precipitation and irrigation, less evapotranspiration losses and deep seepage losses.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and provide safety from natural hazards.

AUTHORIZED OFFICER. Any person authorized by the Secretary of the Interior to administer regulations.

AVOIDANCE AREA. An environmental sensitive area where rights-of-way would be granted only in cases where there is a prevailing need and no practical alternative location exists, and then only with appropriate provisions to protect the sensitive environmental components.

BENEFICIAL USE. The basis, the measure, and the limit of a water right. Agricultural, commercial, industrial, and recreational uses are all considered to be beneficial.

BERM. An embankment or mound of earth or other material. Examples of the use of a berm include use around a tank battery in an oil field to contain spilled fluids or as a barrier across a road or trail to prohibit travel by motor vehicles.

BEST MANAGEMENT PRACTICE (BMP). Methods, measures, or practices selected on the basis of site-specific conditions to ensure that water quality will be maintained to its highest practicable level. BMPs include, but are not limited to structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, or after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2, EPA Water Quality Standards Regulation). Each BMP should identify: (1) specific management objectives, (2) a thorough description of the practice(s) to be used, and (3) a plan for monitoring the effectiveness of the practice(s) toward meeting the stated objectives, so they can be refined over time. Examples of specific BMPs for New Mexico rangelands are given by New Mexico State University (1983).

BIODIVERSITY. Refers to the variety of life and its processes and includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

CALICHE. A brown or white material commonly found as a subsoil deposit in arid or semi-arid climates which is composed largely of calcium carbonate.

CAVE. Any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other manmade excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. The term "cave" includes any natural pit, sinkhole, or other feature which is an extension of the entrance. Refer also to "Significant Cave."

CAVE EXPLORATION. The act of entering a naturally occurring void, cavity, recess or system of interconnected passages which occurs beneath the surface of the earth, ledge, or cliff to investigate, study or analyze contents, hazards and extent; to travel into new territories for adventure or discovery.

CLASSIFICATION OF LANDS. The process of determining whether the lands are more valuable or suitable for transfer or use under particular or various public land laws than for retention in federal ownership for management purposes.

COMMUNITY. A group of plants and animals living together in a common area having close interactions.

COMMUNITY PIT. A site from which nonexclusive disposals of mineral materials can be made.

CONDITION, FUNCTIONAL-AT RISK (Riparian, Wetland). Riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

CONDITION, NON-FUNCTIONAL (Riparian, Wetland). Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to support proper functioning condition. The absence of certain physical attributes, such as a floodplain where one should be, are indicators of non-functioning conditions.

CONDITION, PROPER FUNCTIONING (Riparian, Wetland). Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to: (a) dissipate stream energy associated with high water flow, thereby reducing erosion and improving water quality; (b) filter sediment, capture bedload, and aid floodplain development; (c) improve floodwater retention and groundwater recharge; (d) develop root masses that stabilize streambanks against cutting action; (e) develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and, (f) support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation.

CONDITION, UNKNOWN (Riparian, Wetland). Riparian-wetland areas for which sufficient information is lacking to make any form of determination about functional condition.

CONDITION OF APPROVAL (COA). A requirement appended to a use authorization that must be met in order to be in conformance with the authorization. Conditions of approval may be standard practices that are routinely applied or may be special requirements developed through the NEPA process. Conditions of approval usually are applied to mitigate the impacts of an action. Conditions of approval do not modify any rights granted by a lease (e.g., an oil and gas lease). Also, refer to LEASE, PERMIT, and STIPULATION in the Glossary.

CONDITIONAL WILDFIRE SUPPRESSION. The point in time that the fire exceeds the definable boundaries of the prescribed natural fire parameters, conditional suppression will become full suppression. (Total acres will not be a concern but exceeding the defined boundaries will indicate an escaped fire analysis.)

CONSERVATION (ARCHAEOLOGY). A level of management applied to cultural resources exhibiting uniqueness or relative scarcity of similar cultural properties; research potential that surpasses current state of the art; or singular historic importance or architectural interest.

COORDINATED RESOURCE MANAGEMENT PLAN (CRMP). A plan for management of one or more grazing allotments that involve all the affected resources, e.g., range, wildlife, watershed, minerals, and recreation.

CORRIDOR. A linear strip of land forming a passageway between two points in which transportation and/or utility systems exist or may be located. A designated corridor is the preferred location for existing and future rights-of-way grants that have been identified by law, by secretarial order, through land use planning, or by other management decision.

CRUCIAL HABITAT. Portions of the habitat of a wildlife population that, if destroyed or adversely modified, would result in a reduction of the population to a greater extent than destruction of other portions of the habitat.

CRITICAL HABITAT. Any air, land, or water area, including elements thereof, which have been determined (and published in the Federal Register) to be essential to the survival of wild populations of an endangered or threatened species or to be necessary for their recovery to a point at which the measures provided pursuant to the ESA are no longer necessary.

CULTURAL RESOURCE. The fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events. These resources consist of physical remains, areas where significant human events occurred even though evidence of the event no longer remains, and the environment immediately surrounding the actual resource and oral history or ethnographic accounts of lifeways and customs.

DESIGNATION. The official identification and naming of a general area or site on public land. Lands may be designated when they are either (1) withdrawn, (2) given special status by act of Congress, or (3) established by an approved land use plan.

DESIGNATED USES. Surface water uses specified by the Water Quality Control Commission for which water quality standards have been established. Designated uses apply whether or not they are being attained.

DESIRED PLANT COMMUNITY (DPC). The plant community which provides the vegetation attributes required for meeting or exceeding RMP vegetation objectives. The DPC must be within an ecological site's capability to produce these attributes through natural succession, management action, or both. A specific description of the vegetation needed to meet the vegetation objectives of a detailed activity plan or implementing action can be described as a desired plant community. Seeding mixtures under DPC would emphasize the use of native species and avoid noxious weeds and exotic species.

DISTRICT. The specific area of public lands administered by a district manager.

DIVERSION. A man-made construction that diverts water from its natural source to be put to beneficial use.

DIVERSITY. The relative degree of abundance of wildlife species, plant species, communities, habitats, or habit features per unit area.

DRASTIC. A method developed by the U.S. Environmental Protection Agency for evaluating the potential for groundwater pollution. The name "DRASTIC" is an acronym for the seven hydrogeologic factors that the method uses to produce the Drastic Index. The Index is a numerical value which helps prioritize areas with respect to groundwater contamination vulnerability. The factors are: Depth to water; Recharge; Aquifer media; Soil media; Topography (i.e., slope); Impact of the vadose zone; and, Conductivity (hydraulic) of the aquifer.

ECOLOGICAL SITE INVENTORY (ESI). The effort and documentation needed to establish realistic, achievable, and measurable vegetation management objectives.

ECOSYSTEM. A complex self-sustaining natural system which includes living and nonliving components of the environment and the circulation of matter and energy between organisms and their environment.

ENDANGERED SPECIES (FEDERAL). An animal or plant species whose prospects of survival and reproduction are in immediate jeopardy and in danger of extinction throughout all or a significant portion of its range, as defined by the USFWS under the authority of the Endangered Species Act of 1973, as amended. Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made

factors. Also, see "Threatened Species (Federal)" in the Glossary.

ENDANGERED SPECIES (STATE). Any species or subspecies whose prospects of survival or recruitment in New Mexico are in jeopardy. Also, see "Threatened Species (State)" in the Glossary.

ENVIRONMENTAL ASSESSMENT (EA). The procedure for analyzing the impacts of some proposed action on a given environment and the documentation of that analysis. An EA is similar to an environmental impact statement (EIS) but is generally smaller in scope. An EA may be preliminary to an EIS.

ENVIRONMENTAL IMPACT STATEMENT (EIS). The procedure for analyzing the impacts (both beneficial and adverse) of a proposed action on a given environment, and the documentation of that analysis.

EPHEMERAL STREAM. A stream that flows in direct response to surface runoff.

EPHEMERAL. A stream or portion of a stream that flows in direct response to precipitation, lasts for a short period of time and is not influenced by ground water sources. Also pertains to playa lakes which can be intermittently wet.

EXCHANGE. A trading of public lands (surface or subsurface estates) that usually do not have high public value, for lands in other ownerships which do have value for public use, management and enjoyment. The exchange may be for the benefit of other Federal agencies as well as BLM.

EXCLUSION AREAS. Areas where future rights-of-way may be granted only when mandated by law.

EXTENSIVE RECREATION MANAGEMENT AREAS (ERMA). Areas where recreation is unstructured and dispersed and where minimal recreation-related investments are required. ERMAs provide recreation visitors the freedom of choice with minimal regulatory constraint. These areas consist of the remainder of land areas not included in Special Recreation Management Areas within a resource area.

FEDERAL CAVE RESOURCES PROTECTION ACT (FCRPA) OF 1988. The purposes of this act are (1) to secure, protect, and preserve significant caves on federal lands for the perpetual use, enjoyment, and benefit of all people; and (2) to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on federal lands for scientific, education, or recreational purposes.

FEDERAL LAND. Land owned by the United States and administered by the federal government. Federal land includes public lands (see Public Lands in the Glossary).

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA) OF 1976. Public Law 94-579, gives the BLM legal authority to establish public land policy; to establish guidelines for administering such policy; and to provide for the management, protection, development, and enhancement of the public land. Often referred to and pronounced "FLIPMA."

FEDERAL RESERVED WATER RIGHT. A water right which is reserved by the federal government when land is withdrawn from the public domain for a particular purpose, such as national parks, forests, and monuments. The amount of water reserved is only that necessary to fulfill the intended purpose.

FLOODPLAIN See "One Hundred-Year Floodplain" in the Glossary.

FLOWLINE. The surface pipe through which oil, water, or gas travels from a well to processing equipment or to storage.

FRAGILE SOIL. A soil that is easily damaged by use or disturbance. Examples include soils that are susceptible to compaction or other mechanic damage to their structure, or soils that are highly erodible when disturbed.

FULL WILDFIRE SUPPRESSION. All necessary resources and tactics are utilized to halt fire spread at a minimum acreage with the most cost effect suppression tactics.

GEOGRAPHIC INFORMATION SYSTEM (GIS). Through the use of computer technology, GIS allows the input, storage, analysis, and display of a great volume and variety of physically locatable data (i.e., data which is known to exist at some specific place or area on the ground).

GRANT. A gift of public lands either in quantity or in place. Also, the document or the action which conveys land or an interest in land.

GRAZING CAPACITY. The maximum livestock stocking rate possible without inducing damage to vegetation or related resources such as watershed. This incorporates factors such as suitability of the rangeland for grazing as well as the proper use which can be made on all of the plants within the area. Normally expressed in terms of acres per animal unit month (AC/AUM) or sometimes referred to as the total AUMs that are available in any given area, such as an allotment. Areas that are unsuitable for livestock use are not computed in the grazing capacity. Grazing capacity may or may not be the same as the stocking rate.

GRAZING DISTRICT. Means the specific area within which the public lands are administered under Section 3 of the Taylor Grazing Act. Public lands outside grazing district boundaries are administered under Section 15 of the Taylor Grazing Act.

GROUND WATER. Subsurface water contained in interconnected pores between soil or rock particles in a zone of saturation. Groundwater includes underground lakes and streams in karst areas.

HABITAT. The place where an animal or plant normally lives during its life cycle often characterized by dominant food, cover, water, and space (e.g., the stream habitat, the forest habitat).

HABITAT MANAGEMENT PLAN (HMP). A written and officially approved plan for a specific geographical area of public land which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HAZARDOUS MATERIAL. Any substance posing a threat to the health or safety of persons or the environment. These include any materials meeting the Environmental Protection Agency's criteria for ignitability, corrosivity, reactivity or toxicity.

INFORMATION (ARCHAEOLOGY). A level of management applied to cultural resources. Most sites fall into this category and would be studied for the information that could be retrieved from them. The process of extracting information often destroys the site. These sites could be lithic scatters, campsites and other types of sites.

INSTREAM FLOW. The surface streamflow that is necessary to maintain resources such as water quality, fisheries, recreation, and riparian habitat. Usually expressed in terms of minimum flow requirements.

INTERMITTENT STREAM. A stream that does not flow year round but has some association with ground water for surface or subsurface flows.

KARST. A landform where the topography has been formed chiefly by the dissolving of rock. In some cases, the dissolving of rock may be extensive enough to form passages through which an individual could pass. Surface expressions include sinking streams, swalletts, springs and resurgences, and the presence of sinkholes and caves. Surface streams are few, with most of the drainage being underground. These features are important for ground-water recharge of karst systems.

LEASE. An authorization to possess and use public land for a fixed period of time (usually long-term). Also, any contract, profit-share arrangement, joint venture, or other agreement

issued or approved by the United States Government under a mineral leasing law that authorizes exploration for, extraction of, or removal of oil and gas resources.

LEASE NOTICE. An attachment to an oil and gas lease that transmits information at the time of lease issuance to assist a lessee in submitting acceptable plans of operation, or to assist in administration of leases. A Lease Notice is used to disclose a situation or condition known to exist that could affect lease operations. Lease Notices are not a basis for denial of lease operations.

LEGAL ACCESS. In the context of access to public lands, especially public land tracts that may be adjacent to or surrounded by land of other ownerships, legal access exists when a person can reach a given public land tract without trespassing, such as from a public road or highway, or from another tract of public land. (See "Physical Access.")

LENTIC. Pertaining to static, calm, or slow-moving water or aquatic habitats, such as a marsh.

LEK. A specific area (also termed display, gobbling, booming or strutting grounds) where two or more prairie chicken cocks congregate, typically year after year, for courtship displays in early spring, and vary in size from one-eighth acre to several acres.

LOCATABLE MINERALS. Minerals subject to disposal and development through the Mining Law of 1872 (as amended). Includes all "valuable mineral deposits" including metallic and nonmetallic minerals such as gold, lead, barite, fluorspar or high calcium limestone. It also includes uncommon varieties of sand, stone, gravel, cinders, pumice, pumicite and clay. Also included are all valuable minerals that are not excluded under the leasable and salable minerals.

LOTIC. Pertaining to fast-moving water, such as rivers and streams.

MALPAIS. A Spanish word meaning rough country underlain by dark basaltic lava.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document now replaced by RMPs that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection.

MODERN URBAN (U). Areas with recreation opportunities to experience affiliation with individuals and groups are prevalent as in the convenience of sites and opportunities. Experiencing the natural environmental, and the use of outdoor skills are largely unimportant. One of the six classes of the Recreation Opportunity Spectrum (ROS).

MOIST SOILS MANAGEMENT. Water level manipulation (drawdown) used as a wetland management tool for pastures to optimize food production for waterfowl.

MINERAL MATERIALS. Minerals such as common varieties of sand, stone, gravel, pumice, pumicite and clay which are not obtainable under the mining or leasing laws but which can be obtained under the Materials Act of 1947, as amended. Also known as saleable minerals.

MULTIPLE USE MANAGEMENT. Management of public lands and their various resource values so they are used in the combination best meeting the present and future needs of the American people. Such a concept allows for the most judicious use of some or all of the resources over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions. Relative resource values are considered, not necessarily the combination of uses that would give the greatest potential economic return or the greatest unit output.

NATIONAL REGISTER OF HISTORIC PLACES. A list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture.

NATIONAL TRAILS SYSTEM. The National Trails System is composed of four types of trails: (1) national recreation trails; (2) national scenic trails; (3) national historic trails; and (4) connecting or side trails. National recreation trails provide for numerous outdoor recreation activities in a variety of urban, rural, and remote areas. They may be designated by the Secretary of the Interior or by the Secretary of Agriculture where lands administered by that agency are involved.

NONPOINT SOURCE POLLUTION (NPS). The alteration of waters by activities not regulated as point sources, which degrade the quality or adversely affect the biological community inhabiting the waters.

NO SURFACE OCCUPANCY (NSO). A condition of surface use attached to a lease or other authorization applied to minerals exploration and development which prohibits occupancy of only the land surface or to protect other identified resource values.

NOXIOUS WEED. A plant that causes disease or has other adverse effects on the human environment and is, therefore, detrimental to the agriculture and commerce of the United States and public health. Generally, noxious weeds possess one or more of the characteristics of being aggressive and difficult to manage, parasitic, a carrier or host of harmful insects or disease, and being either native, new to, or not common in, the United States. In most cases, however noxious weeds are nonnative species. Noxious weeds are designated and regulated by various state and federal laws.

OFF-HIGHWAY VEHICLE (OHV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

Open: Vehicle travel is permitted in the area (both on and off roads) if the vehicle is operated responsibly in a manner not causing, or unlikely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural, or vegetative resources of other authorized uses of the public lands.

Limited: Designated areas and trails where the use of an OHV is subject to restrictions, such as limiting the number on types of vehicles allowed, or dates and times of use (seasonal restrictions); limiting use to designated roads and trails. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year.

Closed: Designated areas, roads, and trails where the use of an OHV is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

ONE HUNDRED-YEAR FLOOD. The flood that will be equaled or exceeded an average of once every one hundred years; i.e. the flood that has a one percent chance of being equaled or exceeded in any given year.

ONE HUNDRED-YEAR FLOODPLAIN. The area adjacent to a stream or body of water that would be inundated at the peak of the one hundred-year flood. The floodplain delineated on Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) published by the Federal Emergency Management Agency will be used for management purposes. When a FIRM or FHBM map is not available for the area of interest, the best available information will be used.

PAYMENT IN LIEU OF TAXES (PILT). Payments to local or state governments based on ownership of federal land and not directly dependent on production of outputs or receipt sharing.

PERENNIAL STREAM. Surface water normally flows throughout the year except during infrequent years of drought.

PERMIT (GRAZING). A document authorizing use of the public lands within grazing districts under Section 3 of the Taylor Grazing Act for the purpose of grazing livestock.

PERMIT (LAND). A short-term (generally under 3 years), revocable authorization to use public lands for specific purposes.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PHREATOPHYTE. A type of plant common to arid regions which has an extensive root system to draw water directly from the water table.

PHYSICAL ACCESS. In the context of access to public lands, especially public land tracts that may be adjacent to or surrounded by land of other ownerships, physical access exists when a person can physically reach a given public land tract. The existence of physical access does not always mean that legal access exists. In some cases, taking advantage of physical access may involve trespass. (See "Legal Access.")

PIPELINE. A system of connected lengths of steel or plastic pipe, laid either in the earth or on the surface, that is used for transporting petroleum, petroleum products, chemicals, natural gas, or other fluids.

PLAYA. A shallow, nearly level, often saline, dry lake bed. Playas vary considerably in materials, salinity, and hydrologic regime. In general, playas: (1) collect surface runoff in closed basins; (2) are poorly vegetated; (3) are ephemerally flooded; and (4) have a thin surface of nongravelly, fine-textured sediment.

POINT SOURCE POLLUTION. Pollution discharged from any discernible, confined, and discrete conveyance into a water body; e.g., effluent from a pipe. Point source pollution does not include return flow from irrigated agricultural land.

PRECIPITATION. Any or all forms of water particles, liquid or solid, that fall from the atmosphere and reach the ground.

PRESCRIBED FIRE OR BURN. The skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that would allow confinement of the fire to a predetermined area and at the same time produce the intensity of heat and rate of spread required to accomplish certain planned benefits to one or more objectives of wildlife management, livestock management, hazard reduction, etc. Its objective is to employ fire scientifically to realize maximum benefits at minimum damage and acceptable cost.

PRESCRIPTION. A written statement defining objectives to be attained as well as temperature, humidity, wind direction and wind speed, fuel moisture content, and soil moisture under which a fire will be allowed to burn, generally expressed as acceptable ranges of the various indices, and the limit of the geographic area to be covered.

PRIMITIVE (P). Areas with recreation opportunities for isolation from the sights and sounds of man, to feel a part of the natural environmental, to have a high degree of challenge and risk, and to use outdoor skills. One of the six classes of the Recreation Opportunity Spectrum (ROS).

PUBLIC LANDS. Any land and interest in land owned by the United States within the several states and administered by the Secretary of the Interior through the Bureau of the Land Management, without regard to how the United States acquired ownership, except (1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos.

PUBLIC VALUES AND INTERPRETATION (ARCHAEOLOGY). A level of management of cultural sites which contribute to the belief systems and folkways of a cultural group such as locations having religious significance. Public interpretive sites would have qualities that would lend themselves to being utilized as recreation, education, and interpretive areas.

QUARRYING (MINING). The extraction of building stone or other valuable nonmetallic constituent from a surface mine, or quarry.

RANGELAND. Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

RANGE IMPROVEMENT. An authorized activity or program on or relating to rangelands which is designed to improve production of forage; change vegetative composition; control patterns of use; provide water; stabilize soil and water conditions; and provide habitat for livestock, wild horses or burros, and wildlife. The term includes, but is not limited to structures, treatment projects, and use of mechanical means to accomplish the desired results.

RAPTOR. A bird of prey, such as an eagle, hawk, or owl.

RECLAMATION. The reconstruction of disturbance by returning the land to a condition approximate or equal to that which existed prior to disturbance, or to a stable and productive condition compatible with the land use plan. The immediate goal of reclamation is to stabilize disturbed areas and protect both disturbed and adjacent undisturbed areas from unnecessary degradation.

RECREATION AND PUBLIC PURPOSES ACT (R&PP). The Act of June 14, 1926, as amended (43 U.S.C. 869, 869-4). Allows the disposal of public lands to any state, local, federal, or political instrumentality or nonprofit organization for any recreational or public purpose, at the discretion of the authorized officer.

RECREATION OPPORTUNITY SPECTRUM (ROS). A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. Six classes are included: primitive (P), semi-primitive nonmotorized (SPNM), semi-primitive motorized (SPM), roaded natural (RN), rural (R), and modern urban (U). Refer to the individual definitions in this glossary.

RESERVATION. A withdrawal of a permanent nature, dedicated to a specific public purpose.

RESOURCE AREA (RA). The smallest administrative subdivision of a BLM district. A resource area is administered by an area manager.

RESOURCE MANAGEMENT PLAN (RMP). A written land use plan that outlines BLM's decisions and strategies for management of the resources in a particular area. The RMP has been used by the BLM since 1980.

RESTRICTED AREAS. Areas where mitigation such as seasonal restrictions is required to protect resource values.

RIGHT-OF-WAY (ROW). The legal right for use, occupancy, or access across land or water areas for a specified purpose or purposes. Also, the lands covered by such a right. Examples are roads, powerlines, pipelines, water wells, and communities sites. It does not grant an estate of any kind.

RIPARIAN. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally used to refer to the plants of all types that grow rooted in the water table or streams, ponds, springs, etc.

RIPARIAN AREAS. Riparian areas are a form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.

ROADED NATURAL (RN). Areas with about equal recreation opportunities for affiliation with other user groups and for isolation from sights and sounds of humans. Involves the opportunity to have a high degree of interaction with the with the natural environmental. Challenge and risk opportunities are not very important except in

specific challenging activities. The practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present. One of the six classes of the Recreation Opportunity Spectrum (ROS).

RURAL (R). Areas with recreation opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk taking, and testing of outdoor skills are unimportant, except in activities involving challenge and risk. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SALEABLE MINERALS. See Mineral Materials.

SCOPING PROCESS. An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping may involve public meetings, field interviews with representatives of agencies and interest groups, discussions with resource specialists and managers, written comments in response to news release, direct mailings and articles about the proposed action, and scoping meetings.

SEDIMENT YIELD. A quantitative measure of the total sediment outflow from a watershed over a given period of time at a specified point in the channel. Sediment yield is the difference between the total erosion from slopes, channels, and mass wasting, and the amount of sediment deposited before reaching the specified point in the channel.

SEEPS. Is where ground water percolates to the surface and forms a saturated area.

SEMI-PRIMITIVE MOTORIZED (SPM). Areas with some recreation opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Involves the opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Provides an explicit opportunity to use motorized equipment while in the area. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SEMI-PRIMITIVE NONMOTORIZED (SPNM). Areas with some recreation opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Involves the opportunity to have a high degree of interaction with the natural environmental, to have moderate challenge and risk, and to use outdoor skills. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SIGNIFICANT CAVE. A cave located on federal lands that possesses one or more of the following features, characteristics, or values: (1) Biota; (2) Cultural; (3) Geologic/Mineralogic/Paleontologic; (4) Hydrologic; (5) Recreational; (6) Educational or Scientific.

SIGNIFICANT KARST. An area in which sinkholes or other features, such as lineaments, provide points of recharge to an aquifer that is the source of water for human, livestock, or wildlife use, or which provides a primary recharge zone for cave-related hydrologic systems.

SINKHOLE. A closed depression formed when the ground surface collapses above voids created by the solution of carbonate or evaporite rocks. Water levels typically fluctuate rapidly in sinkholes because of their close connection to groundwater.

SLOPE. The inclination of the land surface to the horizontal. When expressed as a percent, slope equals the change in elevation divided by the horizontal distance, with the result multiplied by 100 percent. Thus, a slope of 20 percent is a change in elevation of 20 feet for every 100 feet horizontally.

SOLID LEASABLE MINERALS. The chlorides, sulfates, carbonates, borates, silicates or nitrates of potassium or sodium and related products; sulphur in the States of Louisiana and New Mexico and on all acquired lands; phosphate, including associated and related minerals;

asphalt in certain lands in Oklahoma; and gilsonite (including all vein-type solid hydrocarbons).

SPECIAL EMPHASIS AREAS. An area containing one or a combination of unique resources or values that receive more intensive management (e.g., ACECs, WSAs, and SRMAs.)

SPECIAL HABITAT FEATURE. A specific component of a habitat site requiring individual consideration, including geological anomalies (cliffs), aquatic situations (seeps), or manmade structures (windmill). A feature may be present in the habitat site because of animal use (booming grounds). Special habitat features may affect wildlife positively or negatively.

SPECIAL RECREATION MANAGEMENT AREA (SRMA). Areas requiring explicit recreation management to achieve BLM's recreation objectives and to provide specific recreation opportunities. SRMAs are listed in this plan which also define SRMA management objectives. BLM's recreation investments are concentrated in these areas.

SPECIAL STATUS SPECIES. Wildlife and plant species either federally listed or proposed for listing as endangered or threatened, state-listed species, or BLM-determined priority species (sensitive species).

SPRING. Is where water is discharged from a fixed point and the flow usually forms a small channel.

STATE APPROPRIATIVE WATER RIGHT. A water right licensed by the New Mexico State Engineer once proof of beneficial use is established.

STATE HISTORIC PRESERVATION OFFICER (SHPO). A position within state governments responsible for coordinating state participation in the implementation of the National Historic Preservation Act. This officer serves as an assistant and consultant when identifying cultural properties, assessing effects to them, and considering alternatives to avoid or reduce those effects.

STIPULATION. A requirement, usually dealing with protection of the environment, that is made a part of a lease, grant, or other authorizing document. In the case of oil and gas leases, a provision that modifies standard lease rights and is attached to and made a part of the lease. Also, refer to CONDITION OF APPROVAL in the Glossary. The following represent the major stipulations on BLM lands:

No Surface Occupancy Stipulation (NSO): A stipulation in which use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect identified resource values.

Timing Limitation Stipulation: A stipulation which prohibits surface use during specified time periods to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project specific mitigation measures would be insufficient.

Controlled Surface Use Stipulation (CSU): A stipulation in which use and occupancy is allowed (unless restricted by another stipulation), but identified resources values require special operational constraints that may modify the lease rights.

STRUTTING GROUND. Synonymous with Lek.

SUITABILITY. The adaptability of an area to grazing by livestock or wildlife.

SUITABLE RANGE. Rangeland that is accessible to livestock, which can be grazed on a sustained-yield basis without damaging the resource.

SURFACE DISTURBANCE. Any action that would cause soil mixing or result in alteration or removal of soil or vegetation and expose the mineral soil to erosive processes. Used in the literal context of actual, physical disturbance and movement or removal of the land surface and vegetation.

SURFACE WATER. All water located at the surface of the land, such as streams, rivers, and lakes.

THREATENED SPECIES (Federal). Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3)disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors. Also, see "Endangered Species (Federal)" in the Glossary.

THREATENED SPECIES (State). Any species or subspecies that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico. Also, see "Endangered Species (State) in the Glossary.

TURBIDITY. A condition in water caused by the presence of suspended matter which results in the scattering and absorption of light. Generally, a measure of fine suspended matter in water.

VALUE. As used in the RMP/EIS, a value refers to a natural resource or characteristic of a natural resource that is not usually a commodity or is difficult to quantify in terms of a unit of measurement. Examples of values in this context are listed in FLPMA and include scientific, scenic, air and atmospheric, historical, archeological and ecological resources.

VEGETATION RESOURCE CONDITION OBJECTIVES (VRCO). In general terms the kinds, types, amounts or appearance of vegetation that will provide the goods, values, and services needed on a geographic area.

VEGETATION TREATMENTS. Methods used to manage the growth and spread of vegetation. A vegetative management practice can either be a direct management of the vegetation itself, for example prescribed fire or indirect management like a change in the number of livestock utilizing the vegetation, or a change in the time frames when livestock are utilizing the vegetation.

VIABILITY INDEX. A mathematical model used to predict the suitability of a pasture for pronghorn populations using variables such as pasture size, ruggedness number of fall forb species and anticipated fall sheep stocking rate. See Appendix 12 of the Draft Roswell RMP/EIS.

VISUAL RESOURCES MANAGEMENT (VRM). The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES. VRM Classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objective for each class.

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III: Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV: Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

Rehabilitation Area: Change is needed or change may add acceptable visual variety to an area. This class applies to areas where the naturalistic character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality class has been reduced because of unacceptable cultural modification. The contrast is inharmonious with the characteristic landscape. It may also be applied to areas that have the potential for enhancement; i.e., add acceptable visual variety to an area or site. It should be considered an interim or short-term classification until one of the other VRM class objectives can be reached through rehabilitation or enhancement. The desired visual resource management class should be identified.

WATER QUALITY STANDARD. Regulations which specify designated uses for surface waters of the state, and water quality criteria to protect those uses. Standards are specified by the Water Quality Control Commission, in accordance with Section 303 of the Clean Water Act.

WETLANDS. Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and which, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, shallows, swamps, lake shores, bogs, muskegs, wet meadows, estuaries, and riparian areas.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features or scientific, educational, scenic, or historical value.

WILDERNESS AREA (WA). An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS STUDY AREA (WSA). A roadless area which has been found to have wilderness characteristics.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDLIFE. Includes all species of mammals, birds, mollusks, crustaceans, amphibians, reptiles, or their progeny or eggs which, whether raised in captivity or not, are normally found in a wild state. Feral horses and burrows are excluded.

WITHDRAWAL. Removal or withholding of public lands, by statute or secretarial order, from operation of some or all of the public land laws. A mineral withdrawal is the closing of an area to mineral location and development activities. A mineral withdrawal includes public lands potentially valuable for solid leasable minerals, precluding the disposal of the lands except with a mineral reservation clause unless the lands are found not to contain a valuable deposit of minerals.

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